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# The Effect of Emotional Freedom Technique on Stress and Anxiety in Nursing Students

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The Effect of Emotional Freedom Technique on Stress and Anxiety in Nursing Students

by

Susan L. Patterson

A capstone project submitted to the faculty of  
Gardner-Webb University School of Nursing  
in partial fulfillment of the requirements for the degree of  
Doctorate of Nursing Practice

Boiling Springs

2013

Submitted by:

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Approval Page

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## Abstract

Stress and anxiety have been identified as significant issues experienced by student nurses during their education. In fact, some studies have suggested that the stress experienced by nursing students is greater than that experienced by medical students, other non-nursing healthcare students, degreed nurses, and the female population in general. A recently introduced energy type therapy, Emotional Freedom Technique (EFT), combines the tapping of meridian points with a focus on the feared object or negative emotion to provide desensitization to the fear. In addition, there is repetition of a statement of self-acceptance suggested to contribute to cognitive restructuring. The purpose of this study was to determine the efficacy of EFT in decreasing anxiety and stress in a convenience sample of nursing students enrolled in an associate degree nursing program. Utilizing a one group pretest-posttest design, participants received group instruction in the technique and were encouraged to repeat it daily. Data collection instruments included a demographic questionnaire, pretest State-Trait Anxiety Inventory (STAI) and Perceived Stress Scale (PSS). STAI and PSS were re-administered at the second, third and the fourth week. A qualitative questionnaire was also administered at the end of the four weeks. Significant reductions in anxiety on both the STAI and PSS were achieved using EFT. Qualitative data suggested that nursing students experienced a decrease in feelings of stress and anxiety including a decrease in somatic symptoms.

*Key words:* Emotional Freedom Technique, stress, anxiety, nursing students

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## **Chapter I**

### **Introduction**

Psychological stress has long been identified to be an unfortunate consequence of a career in nursing. Conditions which contribute to this are increased job demands, inadequate staffing, increased acuity of patients, lack of administrative support, a rapidly changing healthcare environment, and the emotional challenges of working with the sick and dying. Stress and anxiety have also been identified as significant issues experienced by student nurses during their education. In fact, some studies have suggested that the stress experienced by nursing students is greater than that experienced by medical students, other non-nursing healthcare students, degreed nurses, and the female population in general (Baldwin, 1999; Beck, Hackett, Srivastava, McKim, & Rockwell, 1997; Rhead, 1995). Nursing students have identified major areas of stress as coursework, clinical experience, and personal issues (Lindop, 1999; Jones & Johnston, 2000; Timmins & Kaliszer, 2002; Elliott, 2002; Rhead, 1995; Jimenez, Navia-Osorio, & Diaz, 2009).

A variety of stress management approaches for nursing students have been suggested and tested. Jones and Johnston (2000) made a strong endorsement for a multifaceted approach to stress reduction using problem solving, time management, relaxation techniques, as well as other interventions. This same study also emphasized the need for interventions that dealt with the interface between student nurses and the healthcare organization. Galbraith and Brown (2011), in their exhaustive literature review of successful interventions for managing stress, identified that the most successful

interventions had a strong theoretical basis and included, “cognitive reappraisal of maladaptive cognitions, as well as relaxation”(p.718).

Although the role of complementary therapies in the treatment of stress and anxiety is not new, there has been increased interest in the role of energy or biofield therapies in reducing anxiety and promoting feelings of well-being. Biofield therapy is described by the National Institutes of Health’s National Center for Complementary and Alternative Medicine as “the manipulation of various energy fields to affect health” (2011, p.1). Reiki, Healing Touch and Qi gong are examples of such therapies. Another recently introduced energy type therapy is Emotional Freedom Technique (EFT). While similar to other energy based therapies such as Reiki and Healing Touch, EFT may have more in common with acupuncture, a well-known Chinese medicine technique (Church, 2010). EFT combines the tapping of meridian points with a focus on the feared object or negative emotion to provide desensitization to the fear. In addition, there is repetition of a statement of self-acceptance, suggested to contribute to cognitive restructuring, a well-known psychotherapeutic technique (Church, 2010). Tapping points relieve stress, and through the application of a non-traumatic physical stimulus while introducing the fear with the self-acceptance, interrupt the negative somatic response that is associated with that memory and all similar memories (Craig, 2010).

EFT is currently receiving much attention in the treatment of compulsive behavior, phobias, anxiety, and post-traumatic stress disorder. Therapeutic results and relief of symptoms are often quick and dramatic demonstrating rapid improvement in the participant’s ability to tolerate stress. In a review of the literature, no peer reviewed studies addressing the efficacy of EFT in decreasing anxiety experienced by nursing

students was identified. This suggested a gap in the literature and provided an opportunity for further exploration.

### **Problem Statement**

Stress and anxiety have been identified by many researchers as areas of concern for nursing students. Some have documented that stress perceived by nursing students surpasses that experienced by medical students, other healthcare students, and the general female population. For nursing students stressful stimuli abound including academic, clinical and personal origins.

A variety of stress management approaches have been suggested and tested. Galbraith and Brown (2011), in a review of successful interventions for managing stress, concluded that the most successful interventions had a basis in cognitive reappraisal and relaxation. Many have endorsed the use of complementary therapies in the management of stress and anxiety, and most recently energy therapies have emerged as an additional modality option. Although a number of energy therapies have been identified, emotional freedom technique (EFT) has been recently introduced and is currently receiving much attention in the treatment of compulsive behavior, phobias, anxiety, and post-traumatic stress disorder. EFT combines the tapping of meridian points with a focus on the feared object or negative emotion to provide desensitization to the fear. In addition, there is repetition of a statement of self-acceptance, suggested to contribute to cognitive restructuring, a well-known psychotherapeutic technique (Church, 2010).

### **Justification of Project**

Found to be efficacious, EFT can be another tool for successful stress management and anxiety relief in nursing students. Effective stress management has three

major potential implications, improved physical health, improved feelings of well-being and self-efficacy, and improved academic and professional retention. Stress and anxiety have been found to produce or contribute to a variety of somatic disorders including altered immune functions, hyperglycemia, hypertension, atherosclerosis, gastrointestinal disturbances, insomnia and more. Stress management and coping methods have the potential to decrease physical symptoms as well as stress-related disease.

Improved feelings of well-being and self-efficacy promote psychological health and hardiness. The psychologically hardy individual is better able to cope and endure the certain stressors of academics and later, the professional environment. Utilization of effective stress management techniques has the potential to decrease attrition and positively influence retention of nursing students. Improved academic and professional retention is critical in nursing and in healthcare. With the predictions for an unprecedented nursing shortage looming in the next ten years, attracting and retaining competent candidates for nursing is imperative. Furthermore, to succeed in today's healthcare environment the nurse must be resilient. Arming students with effective coping techniques increases their chances for successful health maintenance and professional longevity as they move from academics to practice.

Beyond efficacy, the simplicity and immediacy of EFT for individuals are two of its greatest attractions. The technique can be taught quickly and then practiced by the individual without delay. There is no need for frequent therapist intervention or the cost associated with it. Even more important, therapeutic effects have been reported to occur quickly, perhaps even instantaneously after performing the technique.



Stress and anxiety have been identified in the literature as having a potential detrimental effect on all individuals. Students, especially nursing students, are at particular risk due to academic performance expectations as well as financial and personal stressors. Some studies have identified an inverse relationship between stress and academic performance, although this finding has been inconsistent.

### **Purpose**

The purpose of the project was two-fold. First, a study was to be done to determine the efficacy of EFT in decreasing anxiety and stress in nursing students enrolled in an associate degree nursing program. Secondly, the project established access to this technique through the student success center, a college department which provides tutoring, academic support, and other student resources. Access to this intervention and its ease of self-administration, provides nursing students with one more tool for managing the stress they experience, regardless of its cause.

### **Project Question or Hypothesis**

The research hypothesis for this pilot study was defined as: nursing students participating in EFT will have reduced anxiety relative to baseline as measured by the Perceived Stress Scale, the State-Trait Anxiety Inventory, and a qualitative survey.

### **Definition of Terms**

Four major terms used in this research were defined. These were stress, Emotional Freedom Technique, anxiety, and nursing students. Stress was conceptually defined as the bio-psychosocial response of the individual to a stressor. As further described by Lazarus and Folkman (1984), "Psychological stress is a particular relationship between the person and the environment that is appraised by the person as taxing or exceeding his

or her resources and endangering his or her well-being” (p.19). Anxiety was conceptually described as a multisystem response to a perceived threat or danger and for the purposes of this research may be used interchangeably with the term stress. Emotional Freedom Technique (EFT) was described as meridian based energy therapy comprised of sequenced tapping of particular locations while verbalizing the threat, as well as a positive affirmation. Nursing students were defined as students currently enrolled in a local associate degree professional nursing program.

### **Summary**

Stress and anxiety have been identified by many researchers as areas of concern for nursing students. Some have documented that stress perceived by nursing students surpasses that experienced by medical students, other healthcare students, and the general female population. A variety of stress management approaches for nursing students have been suggested and tested with mixed results. The use of complementary therapies in the management of stress and anxiety, and most recently energy therapies, have emerged as an additional modality option. Emotional Freedom Technique can be another tool for successful stress management and anxiety relief in nursing students. In a review of the literature, no peer reviewed studies addressing the efficacy of EFT in decreasing anxiety experienced by nursing students was identified. This suggested a gap in the literature and provided an opportunity for further exploration.

The research hypothesis for this study was nursing students participating in EFT will have reduced anxiety relative to baseline as measured by the Perceived Stress Scale, the State-Trait Anxiety Inventory, and a qualitative survey. The purpose of this project was two-fold. First, a pilot study was be done to determine the efficacy of Emotional

Freedom Technique (EFT) in decreasing anxiety and stress in nursing students enrolled in an associate degree nursing program. Secondly, the project established access to this technique through the student success center, a college department which provides tutoring, academic support, and other student resources. Access to this intervention and its ease of self-administration, provides nursing students with one more tool for managing the stress they experience, regardless of its cause.

## Chapter II

### Research Based Evidence

Stress and anxiety have been identified by many researchers as areas of concern for nursing students. Some have documented that stress perceived by nursing students surpasses that experienced by medical students, other healthcare students, and the general female population. For nursing students, stressful stimuli abound including academic, clinical, and personal origins.

A variety of stress management approaches have been suggested and tested. Galbraith and Brown (2011), in a review of successful interventions for managing stress, concluded that the most successful interventions had a basis in cognitive reappraisal and relaxation. Many have endorsed the use of complementary therapies in the management of stress and anxiety, and most recently energy therapies have emerged as an additional modality option. Although a number of energy therapies have been identified, Emotional Freedom Technique (EFT) has been recently introduced and is currently receiving much attention in the treatment of compulsive behavior, phobias, anxiety, and post-traumatic stress disorder. EFT combines the tapping of meridian points with a focus on the feared object or negative emotion to provide desensitization to the fear. In addition, there is repetition of a statement of self-acceptance, suggested to contribute to cognitive restructuring, a well-known psychotherapeutic technique (Church, 2010).

The purpose of the project was two-fold. First, a pilot study was done to determine the efficacy of Emotional Freedom Technique (EFT) in decreasing anxiety and stress in nursing students enrolled in an associate degree nursing program. Secondly, based upon the efficacy that was demonstrated in the pilot study, access to this technique

was established through the student success center, a college department which provides tutoring, academic support and other student resources. Access to this intervention and its ease of self-administration provides nursing students with one more tool for managing stress and anxiety.

### **Review of Literature**

An examination of the literature was performed to better understand the prevalence of anxiety reported by nursing students and the effectiveness of complementary therapies, especially meridian based energy therapies such as emotional freedom technique (EFT) in reducing anxiety. The review focused on three main questions: (1) has anxiety been identified as a significant issue for nursing students, (2) what particular interventions have been successfully applied to reduce anxiety, and (3) has EFT been identified as a potential intervention for decreasing anxiety in nursing students or other groups?

A literature search was performed using the Cumulative Index to Nursing and Allied Health Literature database (CINAHL) for the period of October 2000 through 2011. This database was chosen due to its extensive coverage of nursing, biomedicine, health sciences, and alternative/complementary medicine. Search elements included anxiety, stress, nursing students, complementary therapies, energy therapies, and emotional freedom technique (EFT). In the case of EFT, since only a scant number of articles were recovered from the CINAHL search, an EFT website, <http://www.eftuniverse.com/> was also used to identify peer reviewed articles.

### **Stress and Anxiety in Nursing Students**

The literature is rich in documentation of anxiety and stress in nursing students. (Beck et al., 1997; Jones & Johnston, 1997; Maville, Kranz, & Tucker, 2004). Levels of stress in nursing students were demonstrated to surpass levels reported by degreed nurses, medical students, other non-nursing healthcare students, and the overall female population (Baldwin, 1999; Beck et al., 1997; Rhead, 1995). Lindop (1999) was able to identify that student nurses experienced two different kinds of stress, educational and clinical. Educational stressors included heavy workload and exams, while clinical stressors included concerns about level of responsibility, conflict between theory and practice, demanding work, and feelings of inadequacy.

Deary, Watson, and Hogston (2003) performed a longitudinal quantitative study of a cohort of nursing students to better understand causes of stress, burnout, and attrition. At the onset of the study, the sample size was (n=168), but decreased to (n=90) by the end of the study, 24 months later. Six different instruments were used in the study: a mental ability test, a personality inventory, a coping inventory, a health inventory, a burnout inventory, and a stress inventory. Findings concluded that stress and the use of negative coping skills increased as the nursing program progressed and psychological symptoms increased. However, the authors could not demonstrate a direct connection between stress, burn out, and attrition (Deary et al., 2003). This study demonstrated a relatively large sample size and had special value due to its longitudinal cohort design and use of multiple valid instruments. Limitations of the study include the attrition seen in the sample, as well as the limited number of males.

Watson et al. (2008) researched how changes in life events and stress added to psychological distress in nurses and nursing students through a longitudinal quantitative research design. The sample was started with 329 new nurses and nursing students and was completed with 192 remaining. In addition to demographic information, three instruments were employed, a general health inventory, a work-stress inventory, and a life events inventory. Findings demonstrated that life changes and stress contributed to distress, and that newly qualified nurses had a higher reported stress than nursing students (Watson et al., 2008). The study may be limited by the use of a three point likert scale and a non-standard instrument.

Gibbons, Dempster, and Moutray (2008) used a qualitative, descriptive focus group design to study events that caused eustress or distress in nursing students. The study also explored successful methods of coping. A convenience sample (n=16) included female university students in their final year of nursing education. Students identified sources of distress to include new clinical experiences, lack of support from staff, and a number of stressors regarding coursework demands and grades. The focus group also identified increased clinical competence as being a source of eustress. When discussing methods of coping, participants identified support systems and having a positive attitude as being most important. Limitations of this study include its small, convenience sample limited to females and the lack of anonymity in the focus group.

Jimenez et al. (2010) performed a descriptive quantitative and cross-sectional study to identify the differences in reports of stress between novice and experienced nursing students in Spain. The sample size was large (n=357) and included all three years in a diploma program. A demographic tool, a stress measurement tool, and a

physical/psychological symptom tool were used to collect data. Results identified three kinds of stressors in nursing students: clinical, academic, and external. Students perceived clinical rotations to be the most intense source of stress, reporting both psychological and physiological symptoms (Jimenez et al., 2010). The study appeared well designed with a large sample size. Two different instruments were adapted for this study, both with acceptable reliability and validity. Jimenez et al. (2010) identified the cross-sectional nature of the study to be a limitation, suggesting instead a longitudinal study. The findings of the study might also have cultural or curricular influences that limit its ability to be generalized.

### **Stress Reducing Interventions and Modalities**

Interventions for relieving the stress and anxiety in nursing students have received considerable focus in the literature. Much of the literature has recommended the use of multifaceted stress management programs which provide education, counseling, cognitive restructuring, and specific stress reduction techniques. Charlesworth, Murphy, and Beutler (1981) evaluated a five week, 10 session stress management program for nursing students (n=10) that included a variety of relaxation techniques, visual imagery, and modified systemic desensitization. A control group received no intervention. Measurements were accomplished utilizing a reliable, valid anxiety inventory, before and after intervention. The experimental group demonstrated a reduction in test anxiety, while the control group showed a mild increase in anxiety. Limitations of this study include small sample size.

Boutin and Tosi (1983) used a randomized control quantitative study to compare the effects of three interventions on test anxiety reported by female nursing students. The



experiment included four groups: a Rational Stage Directed Hypnotherapy (RSDH) group utilizing a treatment combination of hypnosis, cognitive restructuring and imagery, a hypnosis only group, a placebo group, and a control group. The groups met for one hour sessions for six weeks. The RSDH and hypnosis treatments were both found to be efficacious in decreasing anxiety; however RSDH was the more effective of the two. The study also demonstrated significant improvement in grade point average in the students in the RSDH group and the hypnosis only group, with the RSDH group showing the greatest improvement (Boutin & Tosi, 1983). A limitation of this study is the smaller sample size (n=48).

In a randomized control trial, Jones and Johnston (2000) designed a six session stress management intervention, which included a presentation on coping skills, problem solving strategies, cognitive techniques, time management skills, and relaxation techniques. The purpose of this study was to evaluate the efficacy of a multifaceted stress management intervention in reducing the distress reported by a group of nursing students (n=79). A selection of six different valid and reliable instruments were used in the study, including a general health inventory, an anxiety inventory, a depression inventory, two different stress profiles, and a coping questionnaire. Follow up at three and 18 months showed anxiety was less in those students who received the intervention (Jones & Johnston, 2000). Limitations of this study may be the inability to exclude the influence of outside variables (social support, less stressful clinical assignment) in the results.

Sharif and Armitage (2004) used a quasi-experimental, two group pretest-posttest design to evaluate the effect of psychological counseling and education in decreasing anxiety in nursing students (n=50). Two reliable and valid instruments, an anxiety

inventory and a self-esteem inventory were used. The experimental group was exposed to psychological and educational counseling, while the control group did not receive an intervention. Both groups received a pretest and posttest. Although there was no reduction in anxiety initially, pretest to posttest, there was a decrease in anxiety seen after one semester. The experimental group also demonstrated improved pretest to posttest self-esteem and a statistically significant improvement in grade point average (Sharif & Armitage, 2004). Possible limitations of this study are the smaller sample size and perhaps some cultural limitations that make it difficult to generalize.

Beddoe and Murphy (2004) undertook an exploratory pilot study to evaluate the impact of a mindfulness stress reduction (MBSR) course on stress and empathy. This study consisted of a convenience sample of (n=16) baccalaureate nursing students. Interventions included weekly attendance at mindfulness sessions, guided meditation tapes, and journaling for eight weeks. A pretest-posttest design was used to evaluate changes using four instruments, a demographic profile, an empathy instrument, a stress profile, and a homework questionnaire. Results demonstrated that anxiety was significantly decreased, 75% of students found breath awareness helpful for coping and stress, and a majority experienced greater self-confidence, hopefulness, and greater ability to express their needs (Beddoe & Murphy, 2004). Limitations of this study included small sample size, convenience sample, and high attrition rate.

The literature also commented on other techniques, such as relaxation and hypnosis as being efficacious in decreasing stress in student nurses. Kanji, White, and Ernst (2006) utilized a randomized controlled trial (n=93) to demonstrate the effectiveness of autogenic training in decreasing anxiety in nursing students. Three

groups were identified, the group receiving autogenic training, an attention control group receiving laughter therapy, and a control group receiving no therapy. Autogenic training is described as a relaxation technique that uses autosuggestion through six specific exercises beginning with muscle relaxation and progressing through a number of specific physiological suggestions. Two instruments were used for measurement, a validated anxiety inventory, and a burnout inventory. Blood pressure and pulse rate were measured before and after each session. Study results demonstrated a short term reduction in anxiety and a reduction in systolic and diastolic blood pressure and heart rate immediately after sessions in the group of students who received autogenic training (Kanji et al., 2006). Study limitation included a high dropout rate and non-compliance with study attendance.

Hamrin, Weycer, Pachler. and Fournier (2006) studied the effect of a peer-led support group on graduate nursing students, both group leaders, and members in a qualitative, descriptive study. Sample included (n=11) group leaders and (n=30) group members enrolled in a graduate school program and currently in their mental health rotation. Support groups were led for one hour a week for nine weeks by nursing graduate students who had been educated in group psychotherapy. Both group leaders and group members completed a qualitative survey at the end of the nine weeks. Group members completing the survey (25 of original 30 sample) had the following results: 96% identified the group assisted transition to graduate school; 92% reported improved coping and decreased anxiety; 88% reported improved management of patient issues; 80% described increased self-confidence; 76% reported improved ability in interactions with other nurses, and 72% identified better skill in interactions with peers and preceptors

(Hamrin et al., 2006). Limitations of this study include its qualitative nature and lack of standardization of results, small size, and convenience sample.

A descriptive, correlational study was performed by Hsiao, Chien, Wu, Chiang, and Huang (2010) to better understand the effect of spiritual health on clinical practice stress, depressive tendency, and health promotion among a group nursing students (n=1,276). The authors used four established measurement tools to evaluate the relationship between the four variables. Results demonstrated that spiritual health was negatively associated with clinical practice stress and depressive tendency, and positively associated with health promoting behavior (Hsiao et al., 2010). Some limitations of this study included the predominance of female students limiting the ability to generalize to male students and the possibility of other psychosocial factors influencing the relationship between the study variables.

### **Emotional Freedom Technique (EFT) as a Method for Reducing Anxiety and Stress**

The National Institutes of Health National Center for Complementary and Alternative Medicine [NCCAM] (2010) describes energy medicine or energy therapies as the manipulation of various energy fields to affect health. Energy therapies are sometimes referred to as biofield therapies or meridian based therapies because of the belief that they affect energy fields that surround and intersect the human body. The category can include a number of therapies including Reiki, Healing Touch, Therapeutic Touch, Qigong, and most recently Emotional Freedom Technique (EFT). Research in quantum field theory and biology exists that has established the scientific foundations or basis of electromechanical biofields and meridians establishing efficacy for many energy based therapies through rigorous scientific and peer review studies.

EFT has been described as an energy or meridian therapy, and may also be categorized as energy psychology. Although it has similarities with Healing Touch or Reiki therapies, also described as meridian energy therapies, according to its founder Gary Craig, it may have more in common with acupuncture, a well-known Chinese medicine technique (Church, 2010; Craig, 2010). Craig was influenced by the work of Roger Callahan who developed a treatment called Thought Field Therapy (TFT). Callahan developed TFT during his treating of a patient with water phobia (Callahan, 1997). During treatment Callahan had the patient tap certain parts of her body, purported to be associated with meridians that transport energy. Callahan documented that this treatment led to immediate relief from the phobia. Church (2010) explains that EFT, derived from Callahan's TFT, and modified by Craig, is a more simplified and compact version of the technique. EFT combines the tapping of meridian points with a focus on the feared object or negative emotion to provide desensitization to the fear. In addition, the participant also repeats a statement of self-acceptance which contributes to cognitive restructuring, a well-known psychotherapeutic technique (Church, 2010). A review of the literature in CINAHL yielded a very small number of peer reviewed articles on EFT. For this reason an EFT website was used as an additional database (<http://www.eftuniverse.com>). This website listed 12 articles on the effects of EFT on anxiety, as well as a number of other peer reviewed articles focused on depression, phobias, pain, food cravings and other topics. Unfortunately, most articles were not available through interlibrary loan. A total of nine articles which addressed anxiety or stress in some form were available and were summarized in this literature review.

Wells, Polglase, Andrews, Carrington, and Baker (2003) investigated the ability of EFT to reduce human phobias of small animals through a randomly assigned comparative, experimental, quantitative study. The stated hypothesis was that EFT would have a greater effect on reducing phobia than deep breathing. A total of 35 participants were assigned to either the EFT group (n=18) or the comparison group (n=17) which utilized deep breathing technique as a therapeutic intervention. Five different pretest/posttest measurements were used, including an avoidance assessment, three different phobia assessments, and pulse rate. Statistical calculations demonstrated that the EFT group had significantly greater reduction in fear than the deep breathing group. This improvement continued at six month and 12 month follow-ups, although there was no difference in the amount of pulse rate decrease between the two groups (Wells et al., 2003). Study limitations included small sample size, possible experimenter bias, and lack of a control group to better evaluate placebo effect.

Waite and Holder (2003) undertook a study to assess the efficacy of EFT and evaluate whether any such efficacy was due to changes in energy fields by tapping meridian points. A quantitative, pretest-posttest, experimental, comparative study was performed with a sample (n=122) of college students who admitted to phobias. The sample was divided into four groups, an EFT group, a placebo group who tapped non-meridian points, a 'doll tapping' group, and a control group that received no treatment. Participants used a fear assessment to rate their fear before and after intervention. Waite and Holder (2003) evaluated data prior to treatment, which identified that participants had no difference in their fear rating prior to treatment. Self-reported decreases in fear were reported at a similar level for all groups except the control group, who received no

intervention. The study suggested that although EFT was effective, it was not more effective than placebo or the ‘doll tapping’ procedure (Waite & Holder, 2003). The major limitations of this study were the use of only one instrument to measure fear, the potential that demand characteristics were unconsciously influencing the behavior of the “doll tapping” group and expectancy factor, since the possibility of relief of fear symptoms was mentioned to the participants prior to the study.

Measuring changes in psychological functioning that might be caused by participating in EFT was the purpose of a study by Rowe (2005). The researcher used a quantitative, pretest- posttest design on a convenience sample (n=102) of EFT seminar attendees participating in EFT self-treatment. The study was a time-series, within-subjects, repeated measures design, where the same measures were collected after treatment at one month and six month intervals. All participants completed demographic data collection and a psychological symptom assessment using a reliable and valid tool for measuring distress. This same tool was used consistently in the pretreatment and post treatment intervals. Results demonstrated that when comparing pre-treatment to post treatment, there was a statistically significant decrease in all components of psychological distress. Furthermore, these findings were also demonstrated at the six month interval (Rowe, 2005). Limitations of this study include the convenience nature of sample, small sample size, potential bias of the sample, lack of a control group, and lack of generalizability to the general population.

Brattberg (2008) used an experimental, randomized control, quantitative study to better understand if self-applied EFT would reduce pain perception and increase coping, acceptance, and life quality in a sample (n=86) of women diagnosed with fibromyalgia

for less than five years. All participants completed five different valid questionnaires that measured health, anxiety, depression, pain, and self-efficacy at the beginning and the conclusion of the study. An additional scale was used by the treatment group to measure distress daily after performing EFT. Statistical analysis demonstrated a statistically significant improvement in pain, anxiety, depression, vitality social function, and performance in the group who received EFT (Brattberg, 2008). A high dropout rate and small sample size are two important limitations of this study.

Church, Geronilla, and Dinter (2009) used an observational pilot study with a pretest- posttest design to examine the effects of EFT on psychological symptoms in a sample (n=7) of veterans. All participants received six sessions of EFT. A valid, reliable tool was used to measure psychological symptoms, and some participants also completed a post-traumatic stress (PTSD) inventory. Improvement in symptoms, which achieved statistical significance, was demonstrated for all distress subscales with the exception of phobic anxiety, which only hovered towards significance. All participants also had a significant decrease in anxiety, depression, and PTSD symptoms. The symptom relief continued at 90 days post-intervention (Church et al., 2009). This study's limitations include a small sample size, lack of randomization, lack of control group, and lack of comparison group.

Church (2009a) performed a quantitative, randomized-controlled, blind condition study on a sample (n=26) of athletes to ascertain the effect of EFT on athletic performance, specifically vertical jump height and free throws. The purpose of the study was to examine if EFT could make a difference in athletic performance by diminishing anxiety. As measurement, jump height using a jump pad, and free throw performance



were recorded before randomization into groups and then after EFT intervention. In addition, Church also used a self-report distress scale to measure participant distress before and after EFT intervention. Percent change scores were calculated and results demonstrated that the EFT group demonstrated a 20.8% improvement in free throws. The control group and EFT group showed no difference in jump height (Church, 2009a). Limitations of this study included small sample size and limited ability to generalize findings to the general population. In addition, although the researcher hypothesized that EFT would improve athletic performance by decreasing anxiety, anxiety was not measured prior to or after the intervention.

A descriptive pilot study was performed by Church in 2009 to evaluate the efficacy of a brief but intensive EFT treatment in improving post-traumatic stress and psychological issues in veterans (n=11). The participants completed three measurements, a PTSD measurement, a psychological symptom measurement, and a sleep diary. These measures were completed pre-intervention, at intervals during treatment and at 30 days, 90 days, and one year after treatment. Statistically significant improvements were found in both PTSD, psychological symptoms, and sleep at the 30 day, 60 day, and one year follow up (Church, 2009b). Limitations of this study included small sample size and potential bias of the researcher.

Church et al. (2010) explored the effect of EFT on PTSD and psychological distress in veterans using a quantitative, randomized controlled trial. The authors used a treatment group receiving six sessions of EFT (n=30) and a wait-list control group (n=29). Valid measurement tools were used including a PTSD measurement, a measurement for psychological symptoms, and a measurement for insomnia. Pretest and

posttest measurements were compared on the two groups. Results demonstrated the EFT group to have significantly less psychological symptoms than the pilot group in all but one area. Furthermore, 90% of the EFT group no longer met PTSD diagnostic criteria, compared to 4% of the control group. These results continued three months post intervention (Church et al., 2010). The small sample size limited the ability to generalize the results of this study.

Karatzias et al. (2011) performed a randomized, controlled, comparison study of eye movement desensitization and processing (EMDR) and EFT for PTSD. A sample of 46 participants were randomized into the EFT (n=23) or the EMDR (n=23) group. Four measurements were given, two different PTSD measurements, an anxiety/depression measurement, and a life satisfaction scale. These assessments were completed a month before treatment, pretreatment and post-treatment. Results concluded that both groups demonstrated a significant positive treatment effect. The EMDR group had a slightly higher amount of patients demonstrating positive treatment changes (Karatzias et al., 2011). Limitations included a small sample size and significant attrition before study completion.

### **Strengths and Limitations of Literature**

Anxiety and stress as perceived by nursing students is well documented in the literature and in fact studies demonstrated that perceived stress and anxiety in nursing students may be greater than the stress reported by medical students, other healthcare professionals and the female population in general. Some researchers have suggested that nursing students may share a common characteristic or trait which makes them less resilient or unable to cope with stress (Baldwin, 1999; Beck et al., 1997; Rhead, 1995).

Sources of stress included clinical, classroom, and personal experiences. Often the clinical area was identified as the greatest producer of stress and many sources of clinical stress were outlined including: inadequate supervision, workload, feelings of inadequacy, conflict between academics and practice, and others (Lindop, 1999).

Many interventions for stress and anxiety in nursing students were mentioned in the literature including psychological counseling and education, mentoring, time management skills, relaxation techniques, cognitive restructuring, massage, and hypnosis. The various therapies and methods had mixed results. Relaxation techniques were endorsed as methods that were successful in reducing stress. A strong endorsement was made by one author for the need for a multidimensional approach to stress management that focused on the student, the institution, and the interface between them (Jones & Johnston, 2000).

EFT, a meridian or energy based therapy, has been shown to significantly decrease anxiety and feelings of distress in a variety of populations and settings. These settings and conditions included veterans, phobic individuals, athletes, individuals diagnosed with fibromyalgia, and others. The technique combines the tapping of the energy meridians, with two other components, confrontation of the fear and a statement of self-acceptance, two therapeutic methods already accepted. Positive effects are produced with minimal intervention and are demonstrated to extend to periods of at least a year. When compared to other similar therapeutic interventions, EFT has been shown to have equal to superior impact on reducing anxiety.

### **Gaps in Literature**

EFT is a fairly recent therapeutic technique and peer-reviewed literature is limited. There was no research uncovered on the use of EFT in nursing students to reduce anxiety and stress, nor the application of EFT to assist in anxiety and stress reduction in other healthcare professionals. This represents a gap in the literature and an opportunity for further study and application of evidence.

### **Theoretical Framework**

Lazarus's Transaction Model of Stress, Appraisal and Coping was chosen as a theoretical framework for this study. Lazarus's work represents a grand theory which provides an overall explanation of stress and coping phenomena. Developed by Lazarus and Folkman (1984), the theory describes a cognitive approach to viewing the stress and coping response. Lazarus and Folkman emphasize that stress is not just a response to a stimulus, "Psychological stress therefore is a relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being" (1984, p. 21). The model contains three basic components: antecedents of appraisal, appraisal (primary, secondary, coping, and reappraisal), and outcomes (short term and long term).

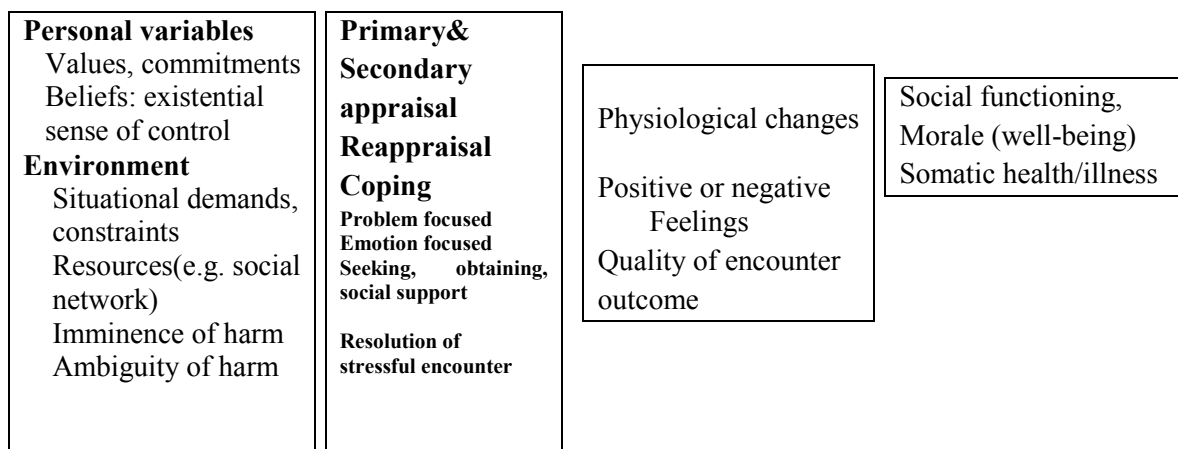
Antecedents of appraisal are two distinct sets of variables, personal and situational, that influence whether the stress being appraised is a threat or a challenge. This interpretation is related to resistance and vulnerability variables reflecting the environment or the individual's personality. Environment antecedents include timing and information. Personal antecedents may include self-esteem, self-efficacy, values, and beliefs (Lazarus & Folkman, 1984).

Cognitive appraisal and coping are two important processes that mediate the relationship between the person and the environment. In cognitive appraisal, the individual evaluates whether a particular transaction within the environment is threatening to well-being. Coping is then applied to assist the individual in responding to the threat as well as the emotional response that may be generated from it. The process of cognitive appraisal includes three subcomponents, primary appraisal, secondary appraisal, and reappraisal. Primary appraisal is defined by Lazarus and Folkman (1984) as the initial evaluation of the transaction as irrelevant, positive, or stressful. In stressful encounters, primary appraisal can have one of three perceptions, harm/loss, threat, or challenge. During secondary appraisal the individual considers what could be done and what potential risks or benefits are associated with a particular coping strategy. In reappraisal, the individual considers the success of the coping strategy chosen in terms of their psychological response. Coping is then applied to assist the individual in responding to the threat of the transaction, as well as the emotional response that may be generated from it. Lazarus and Folkman define coping as, “constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person” (1984, p.141). Two different functions of coping are also defined. These are problem-focused coping which deals with managing or controlling the problem and emotion-focused coping which focuses on controlling the emotional response to the problem.

As a result of coping, short term and long term outcomes are generated and manifested in the form of social functioning, morale, and somatic health. The term social functioning suggests that the individual is able to successfully perform their various roles

and maintain successful relationships with others. Morale is defined as how an individual subjectively feels about themselves and their life. It may also be described as personal satisfaction, happiness or well-being. Somatic health is not explicitly defined by Lazarus and Folkman, but they do advocate that stress and lack of coping are contributing factors to disease and illness, and that positive coping styles can improve health outcomes. Short term and long term outcomes are counterparts of each other with the addition of the variable of time. As described by Lazarus and Folkman, “Each of the three long-term adaptational outcomes with which we are concerned, social functioning, morale, and somatic health, has its counterpart in the short term outcomes of stressful encounters...” (1984, p.143). Short term outcomes include positive or negative feelings associated with specific encounters, while long term outcomes represent the cumulative effect of these encounter experiences. Figure 1 illustrates the Stress, Appraisal and Coping Theory as described by Lazarus and Folkman (1984).

**Causal Antecedents → Mediating processes → Immediate effects → Long term effects**



*Figure 1.* A theoretical schematization of stress, coping and adaptation. (Lazarus & Folkman, 1984, p. 305)

Lazarus and Folkman's theory provides an excellent theoretical framework for nursing research in the discipline of stress and adaptation. A number of nursing theorists including Roy, Mishel, and Watson have been significantly influenced by the work of these researchers. As mentioned earlier, Galbraith and Brown (2011) emphasize the importance of research in stress management having strong theoretical underpinnings. For this study, that strong theoretical framework is clearly provided in Lazarus and Folkman's Stress, Appraisal and Coping Theory. A conceptual theoretical empirical (CTE) diagram is presented in Figure 2.

<b>Grand Theory/Conceptual Model</b>	<b>Middle Range Theory</b>	<b>Empirical Measurements</b>
Lazarus's Transaction Model of stress, appraisal and coping <i>Primary appraisal</i> <i>Secondary appraisal</i> <i>Coping</i> <i>Reappraisal</i> <i>Social functioning, morale and somatic health</i>	The effect of Emotional Freedom Technique on stress and anxiety in nursing students. <i>Provides cognitive reappraisal of stress.</i> <i>Provides coping.</i>	Perceived Stress Scale State Anxiety Inventory Trait Anxiety Inventory <i>Measure perception of stress, anxiety.</i> <i>Measure reappraisal.</i> <i>Measure coping.</i> Qualitative questionnaire <i>Measures coping, moral.</i>

Figure 2. CTE diagram.

### Summary

Anxiety and stress as perceived by nursing students was well documented in the literature, and in fact studies demonstrated that perceived stress and anxiety in nursing students may be greater than the stress reported by medical students, other healthcare professionals and the female population in general. Some researchers have suggested that nursing students may share a common characteristic or trait which makes them less resilient or unable to cope with stress. Sources of stress included clinical, classroom, and personal experiences. Often the clinical area was identified as the greatest producer of stress and many sources of clinical stress were outlined including: inadequate supervision, workload, feelings of inadequacy, conflict between academics and practice and others (Lindop, 1999).



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EFT, a meridian or energy based therapy has been shown to significantly decrease anxiety, and feelings of distress in a variety of populations and settings. These settings and conditions included veterans, phobic individuals, athletes, individuals diagnosed with fibromyalgia, and others. The technique combines the tapping of the energy meridians, with two other components, confrontation of the fear and a statement of self-acceptance, two therapeutic methods already accepted. Positive effects are produced with minimal intervention and are demonstrated to extend to periods of at least a year. When compared to other similar therapeutic interventions, EFT has been shown to have equal to superior impact on reducing anxiety.

EFT is a fairly recent therapeutic technique and peer-reviewed literature was limited. There was no research uncovered on the use of EFT in nursing students to reduce anxiety and stress, nor the application of EFT to assist in anxiety and stress reduction in other healthcare professionals. This represents a gap in the literature and an opportunity for further study and application of evidence.

## **Chapter III**

### **Project Description**

Stress and anxiety have been identified by many researchers as areas of concern for nursing students. Some have documented that stress perceived by nursing students surpasses that experienced by medical students, other healthcare students, and the general female population. For nursing students stressful stimuli abound including academic, clinical, and personal origins.

A variety of stress management approaches have been suggested and tested. Galbraith and Brown (2011), in a review of successful interventions for managing stress, concluded that the most successful interventions had a basis in cognitive reappraisal and relaxation. Many have endorsed the use of complementary therapies in the management of stress and anxiety and most recently energy therapies have emerged as an additional modality option. Although a number of energy therapies have been identified, emotional freedom technique (EFT) has been recently introduced and is currently receiving much attention in the treatment of compulsive behavior, phobias, anxiety, and post-traumatic stress disorder. EFT combines the tapping of meridian points with a focus on the feared object or negative emotion to provide desensitization to the fear. In addition, there is repetition of a statement of self-acceptance, suggested to contribute to cognitive restructuring, a well-known psychotherapeutic technique (Church, 2010).

The purpose of the project, the effect of Emotional Freedom Technique on stress and anxiety in nursing students, was two-fold. First, a pilot study was done to determine the efficacy of Emotional Freedom Technique (EFT) in decreasing anxiety and stress in nursing students enrolled in an associate degree nursing program. Secondly, access to

the technique was established through the Student Success Center, a college department which provides tutoring, academic support and other student resources.

## **Project Implementation**

### **Needs Assessment**

A needs assessment was performed to confirm whether the preponderance of reports of stress and anxiety in nursing students as reported in the literature was reflective of that seen in a local associate degree nursing program. The project administrator, as a faculty member in a school of nursing, has had numerous students verbalize feelings of anxiety which they found difficult to control. Causes for anxiety and stress included academics, clinical performance concerns, and personal issues. Students often employed a variety of stress management techniques including, relaxation, yoga, exercise, and counseling with mixed results. Other faculty in the fundamental level, as well as faculty in the intermediate and advanced levels of the curriculum reported stress and anxiety to be issues for nursing students in the program. In an informal interview during the summer of 2011, the Director of Continuing Education, a content expert on energy modalities in this local two year college, confirmed that stress and anxiety were challenging issues for many students at the college. She also agreed that there was need for additional modalities to be presented to students, and due to her familiarity with EFT, agreed that this technique might be especially useful.

In May 2011, the Student Success Center Coordinator was approached to discuss the potential project concept. The coordinator confirmed that stress and anxiety were indeed issues for many students that accessed the Student Success Center. Typical interventions included relaxation techniques, recommendations for exercise, improved

life management, and sometimes referral to the Employee Assistance Program (EAP).

The coordinator agreed that there was a need for an additional intervention that was easy for students to use and demonstrated results.

In January, 2012, the college president was presented with a verbal description of the proposed intervention and project. The college president enthusiastically confirmed that there was great need to help students better manage their stress and anxiety. Since nursing students comprised about 80% of the college population she agreed that there was particular need here.

### **Pilot Study**

Because of the newness of EFT as a stress reduction technique, the limited amount of literature available on the efficacy of EFT and the absence of literature on the efficacy of EFT in nursing students in particular, first a pilot study was undertaken to better understand the effectiveness of the technique. In order to test the hypothesis, ‘nursing students participating in EFT will have reduced stress and anxiety relative to baseline as measured by the Perceived Stress Scale, the State-Trait Anxiety Inventory, and a qualitative survey’ the pilot study used both quantitative and qualitative designs. Quantitatively, a quasi-experimental, time series, pretest-posttest design was chosen. This design type was chosen since both randomization and a control group could not easily be established (Peters, 2012, pp. 162-185). Qualitatively, a post pilot, short answer questionnaire was used to better understand participants experience with EFT. A qualitative research method was chosen to provide insight into the participant’s perceptions or subjective experience, often overlooked by quantitative methods. Since there was a void of literature on the effect of EFT on stress and anxiety in nursing

students, it was hoped that the qualitative questionnaire would provide descriptive information on the experience of nursing students with the intervention. Numerous documents were used in implementation and evaluation of the pilot study and they are described here and included in the Appendices.

**Introductory documents.** EFT, The Basic Recipe (Appendix A): participants were instructed on EFT as described in The Basic Recipe (Craig, 2010). Recruitment poster (Appendix B): posters were displayed throughout the college with information regarding the introduction session.

Recruitment email (Appendix C): Mass email was sent to the nursing student body announcing the pilot study.

Recruitment newsletter announcement (Appendix D): an announcement was placed in the student newsletter announcing the pilot study.

Follow-up invitation to interested students (Appendix E): students who responded to any of the recruitment methods received an email describing the details of the pilot, the time commitment involved, and an invitation to the first session.

EFT instructions for first session (Appendix F): participants were provided with step by step instructions for the technique.

Introductory session agenda and teaching plan (Appendix G): a teaching plan and agenda for the introductory session including objectives and talking points were developed and used as a framework.

Consent (Appendix H): participants signed a letter of informed consent to participate in the project. The consent was approved by both Carolinas Healthcare System and

Gardner-Webb University Institutional Review Boards for the Protection of Human Subjects (IRBs).

**Data collection documents.** Demographic questionnaire (Appendix I): this demographic inventory was administered at the onset of the pilot study.

Perceived Stress Scale (Appendix J): this anxiety measurement instrument was administered to participants pre and post intervention throughout the study.

State Anxiety Inventory (Appendix K): this anxiety measurement instrument was administered to participants pre and post intervention.

Trait Anxiety Inventory (Appendix L): this anxiety measurement instrument was administered to participants pre and post intervention.

EFT log (Appendix M): this log was used for the participant to provide written documentation of the frequency the technique was practiced each week.

Qualitative instrument (Appendix N): this short answer questionnaire was administered at the end of pilot study.

Debriefing Statement (Appendix O): this document was given to students at the completion of the study to provide a recap of the pilot and contact information for questions or concerns post pilot.

**EFT Access through the Student Success Center.** After completion of the pilot study, access to the technique was established through the Student Success Center, a college department which provides tutoring, academic support, and other student resources. This was facilitated through the recording of an instructional video demonstrating the EFT intervention, and the development of an EFT instruction card. A process was established for all students accessing the EFT intervention to complete the

PSS tool before and after the two week intervention period to evaluate its effectiveness. In addition to the PSS tool, students also completed a survey to assess satisfaction with the intervention and ease of access. To date only one student has accessed the EFT through the student success center. Evaluation from the student is expected to be available later in the semester. The student success center coordinator, also familiar with EFT through continuing education, demonstrated good understanding of the technique, and was supportive of its use. Pilot results were shared promoting even greater enthusiasm for using the technique in the student success center.

In addition, an evaluation was completed by the student success coordinator to obtain feedback on the effectiveness of the EFT intervention, its ease of access, ease of delivery, the success of its integration into the student success center, any unanticipated costs, and the overall project implementation. Evaluation from the student success center coordinator is expected to be available during the following semester. Documents used in the implementation and evaluation of EFT in the Student Success Center are described here and included in the Appendices. Student success center implementation steps: directions for the implementation of the project component of the Capstone (implementation of EFT into the student success center) were provided in writing for the Student Success center coordinator to facilitate the implementation process.

**Documents used in the EFT implementation project.** EFT Student Log (Appendix P): a log was provided to document, student ID, pre and post intervention PSS and student evaluation completion in the student success center. EFT Project Implementation Evaluation (Appendix Q) - Student: an evaluation form was provided for students to evaluate the technique.

EFT Implementation Evaluation Student Success Center Coordinator (Appendix R): an evaluation form was provided for the coordinator to evaluate the technique.

### **Setting**

The setting for this project was an associate degree nursing program in the southeast region of the United States. Group sessions were held in classrooms at the college with access only to those participants admitted to the pilot in order to provide participants with confidentiality.

### **Sample**

Participants in the pilot study were a convenience sample of associate degree nursing students recruited by a variety of means including college newsletter announcements, email invitation, electronic, and paper poster displays. Exclusion criteria included those currently being professionally treated for anxiety and those who were already regular users of EFT. The rule of 30 was applied to determine the sample size for the pilot study. Burns and Grove (as cited in White, 2012) suggest that in quantitative research at least 30 participants are needed in each group being studied. Melnyk and Cole (2011) also state that pilot studies are conducted with smaller sample sizes of perhaps 30-40 participants. The initial sample size was 39 participants, final sample was 37.

### **Project Design**

The pilot study used both quantitative and qualitative methods. In the quantitative component a quasi-experimental, time series, pretest-posttest design was used. For the qualitative component, a short answer questionnaire was administered post pilot to obtain data regarding the subjective experience of participants with EFT. The pilot began with an introductory session (week 0) followed by four follow up sessions, each a week apart.



During the first follow up session (week 1) and the second follow up session, (week 2), participants met as a group. The technique was practiced and surveys were completed. No group session was held during week 3. Participants practiced the technique independently and surveys were completed remotely. In the final group session (week 4) surveys were completed and debriefing statements were provided. Additional small group and individual sessions were provided when participants missed a regularly scheduled group meeting.

All weekly group sessions, data collection methods, and demonstration of the EFT were performed by the project administrator. Although most participants completed the instruments in the group sessions, there were occasionally participants who could not attend the group session and completed the instruments remotely. Instruments were administered using SurveyMonkey to facilitate ease, accuracy, and completeness of data collection and provide a means for the occasional need for remote survey completion. To protect the integrity of data, only surveys for the current project week were made available and survey access was limited by opening surveys just prior to the collection period and then closing surveys immediately after the collection period. The project administrator supervised the completion of all instruments in either face to face in group sessions or remotely by inspecting the survey monitoring section of SurveyMonkey. After recruitment efforts were completed, data collection proceeded in the following steps:

1. The sample of nursing student participants attended one of three group introductory sessions offered on the same day, when students were likely to be on campus. Consent for participation was obtained. All participants selected a unique

identifier to maintain confidentiality. The unique identifier was used on each instrument completed by the participant allowing data to be linked by participant across instruments and weeks. As part of the data collection process, PSS, STAI, and qualitative surveys were programmed in SurveyMonkey to require responses to all questions before exiting the survey, thereby providing completeness and diminishing missing data.

2. While in session, participants accessed the project website that included links to all instruments via SurveyMonkey, via lab computers. Participants self-administered the demographic questionnaire, pre-test STAI (both state and trait), and PSS.

3. After completion of the pretests participants received instruction in the technique, a demonstration and the opportunity to practice. Participants were encouraged to practice the technique daily and record the frequency in a weekly log, also available through the project website. A safety plan including contact numbers for the researcher and for local emergency mental health services was shared in case students' anxiety increased during the study. EFT instructions and an EFT instruction card were also provided.

4. Participants returned for a group session once a week for two weeks to allow for questions, reinforce the technique, monitor progress, and identify any changes in anxiety level. Occasionally there were participants who either had schedule conflicts or forgot to attend the scheduled group sessions. Participants who did not attend the scheduled group session were contacted the same day and meet for a small group or individual session either the same day or the next day. Weekly to bi-weekly email reminders were sent encouraging participants to practice the technique, log their frequency, and attend the next session. At the end of the third week, no group session was

held and participants were encouraged to practice the technique and complete the survey instruments on their own. This was encouraged by email reminder as well as by direct instruction during the introductory and previous face to face session.

5. PPS and STAI were re-administered to participants at the end of the fourth week, the final week of the pilot. A qualitative survey was also administered at this time. During the last session students received a debriefing statement, as well as their Target gift certificate.

### **Protection of Human Subjects**

Human rights were protected in this research. Two different Institutional Review Boards (IRB) from Gardner-Webb University and Carolinas Healthcare System gave approval for this pilot study. The project administrator also completed the Collaborative Institutional Training Initiative (CITI) course for education in research ethics. Verbal instruction on measurement tools, pilot duration, and written pilot information was also provided. Opportunity was provided for questions and answers and the participants signed a written consent. In observance of IRB guidelines, all participants received informed consent including a description of the study and how privacy and confidentiality would be maintained. Confidentiality was protected as the names of participants were never discussed with faculty, staff, students or others. Because of the group setting, anonymity could not be guaranteed. Participants were told this at the onset of the project and were reminded not to discuss the identity of others outside the project environment. Participants were not exposed to risks, but to promote participant safety, contact information for the Carolinas Healthcare System Employee Assistance Program

and the Mecklenburg County Crisis Hotline, as well as contact information for reaching the project administrator was provided.

During the final group session, as well as final individual sessions, all attending participants were debriefed using the debriefing statement. The debriefing statement included thanking them for their participation, a recap of the pilot study process, and contact information for questions or concerns.

Participant identity has also been protected in the management of pilot data. All data was de-identified by removal of personal identifiers and assignment of an alpha-numeric code. All information and data has been kept stored separately from identifying data. All data has been stored in a password protected computer in the researcher's home office. Data will be stored for five years, at which time it will be destroyed. Reporting of research results will also be void of participant identity.

This project was under the oversight of a PhD committee chair, content expert, and two additional doctoral prepared faculty from Gardner-Webb University. Onsite at the school of nursing, guidance was provided through a PhD prepared preceptor. In addition to the project administrator, all committee members have abided by Protection of Human Subjects guidelines. Only the primary investigator, no other individual, was involved in gathering data. A potential conflict of interest in this study was that the project administrator had been an instructor to some student participants. Participants were reassured that participation in the study would not affect grading and that all data would be de-identified.

## **Instruments**

Three instruments were used in this project; the State-Trait Anxiety Inventory, (STAI), the Perceived Stress Scale (PSS), and a qualitative questionnaire. Basic demographic data including age, gender, marital status, race/cultural background, years of previous college, current course enrollment, previous experience with EFT, and current involvement with other anxiety/stress reduction interventions were collected since these demographics could potentially affect the dependent variable. Participants were also asked to record the frequency of their use of the technique in a weekly log.

The STAI, developed by Spielberger, Gorsuch, and Lushene (Tilton, 2008) is a 40 item self-report instrument that measures both state and trait anxiety. State anxiety is defined as a temporary condition of anxiety while trait anxiety is a longstanding anxiety trait. Using a four point likert scale and written at a 5<sup>th</sup> grade reading level, the tool can be administered within approximately 10 minutes. There are two subscales, trait and state anxiety, with the total score achieved suggesting the kind of anxiety present. Scores range from 20 to 80, with higher scores positively correlated with higher levels of anxiety. Some questions are related to the absence of anxiety, and as such are reverse coded. The scores for each question within each subscale are summed to achieve a final subscale anxiety score.

The STAI is a well-known anxiety inventory frequently chosen by researchers to measure this construct. Reliability has been established at .54 for state anxiety and .86 for trait anxiety (Spielberger, Gorsuch, & Lushene, 1970). Acceptable concurrent validity was also demonstrated (.54 to .80) when comparing the STAI to three other anxiety

measurement instruments. Permission was obtained to use the STAI state and trait anxiety tools and is displayed in the upper margin of each tool sample.

Cohen, Kamarck and Mermelstein developed a 14 item self-report, one dimensional tool for measuring perceived stress called the Perceived Stress Scale (PSS) (Cohen, Kamarck, & Mermelstein, 1983). As described by Cohen et al. (1983) “PSS items were designed to tap the degree to which respondents found their lives unpredictable, uncontrollable and overloading” (p. 387). Cohen et al. (1983) were influenced by the work of Lazarus and others who identified cognitive appraisal and coping as two important processes that mediate the relationship between the person and the environment. Using a five point likert scale, the PSS measures an individual’s perceived stress over the previous month. In addition to the 14 item PSS, a 10 item and a four item have also been developed. The 10 item form was chosen for this study since it is frequently used in health and psychosocial research to measure stress, has been tested psychometrically and has brevity. Coefficient alpha reliability for the PSS was .84, .85, and .86 on three samples originally used to evaluate reliability (Cohen et al. 1983). Concurrent, convergent, and predictive validity have also been demonstrated for this instrument (Cohen et al., 1983; Cohen & Williamson, 1988). Since this tool is designed to measure current reports of stress, its predictive validity decreases quickly after four to eight weeks. Scores are obtained by reversing responses to each of the four positively stated items and then tallying the scores for the 10 items. Permission was obtained to use the Perceived Stress Scale (Appendix S). Table 1 lists the study variables and measurement tools.

Table 1

*Variables and Measurement Tools*

Variable	Type of Variable	Tool	Reliability	Validity
Anxiety	dependent	PSS	.84-.86	Predictive but not quantified
State anxiety	dependent	STAI-state	.54	.54-.80
Trait anxiety	dependent	STAI-trait	.86	.54-80

A qualitative questionnaire was used post pilot to better understand participants experience with EFT. Questions are listed in Table 2. This questionnaire was developed by the project administrator and has no established reliability and validity. The questionnaire was reviewed by two field experts. Expert A is a PhD prepared nurse practitioner, chairperson for the project, and well versed in qualitative research, energy medicine, and alternative therapies. Expert B is a master's prepared educator with experience in energy medicine including EFT and Reiki.

Table 2

*Qualitative Questionnaire*

Question
How easy was it for you to use and incorporate the technique into your daily routine?
Did you experience any change in mood or feelings immediately after using the technique? If so, please describe what you felt.
Did you experience any change in anxiety or stress immediately after using EFT? If so, how did you experience the change?
After the four weeks of using EFT, did you experience any overall change in mood or feeling? If so, please describe the overall change or feeling.
After four weeks of using EFT, did you experience any overall change in feelings of anxiety or stress? If so, how did you experience the change?
Are there any other feelings or experiences you would like to comment on regarding your practice of EFT?

**Data Collection**

All data was collected by the project administrator during the four weeks that the project was in session. Data was collected through the demographic survey, weekly logs, PSS, STAI, and the qualitative questionnaire. All instruments were inputted into SurveyMonkey to ease the process of data collection, retrieval, and analysis. To facilitate complete data capture and avoid missing data, each item in each instrument was programmed to require a response. To facilitate the identification of participants across instruments, the first question with a corresponding required field on each of the instruments was, “what is your project ID?” Participants accessed instruments through a project website, which provided links to each of the instruments in SurveyMonkey, an electronic survey engine.



### **Data Analysis**

Data entry was performed directly by participants as they completed instrument responses. Through the use of SurveyMonkey, quantitative data was collected and easily exported to the Statistical Package for the Social Sciences, version 20 (SPSS) for data analysis. Once in SPSS, data was reviewed for missing variables. Since responses were required for all questions there were no missing variables. All data collection instruments were renamed for consistency in identification as week 0 (baseline), week 1, week 2, week 3 and week 4. Using the project ID to identify participants, all participant files were reviewed for missing weekly instrument or log data. Four participant files were excluded from the data sample because of no EFT log for all four weeks. Project IDs were also scanned for duplicate project ID numbers and duplicate files were deleted. Excluded, duplicate files are presented in Table 3. Duplicate files were likely caused by participants inadvertently choosing the same project ID number. A traditional alpha level of .05 was chosen as the indicator of statistical significance.

Table 3

*Deleted Cases*

Instrument	Date	Case deleted	Reason
PSS	10/15	7920	duplicate
STAI state	10/15	7920	duplicate
STAI trait	baseline	4540	duplicate
		7920	duplicate
EFT log	10/15	7920	duplicate
	Wk2	7096	duplicate
		8338	duplicate
	Wk3	4335	duplicate
		6164	duplicate
	Wk4	0312	duplicate
		7096	duplicate
	Qualitative		8995
		7920	duplicate
		7920	duplicate
Demographic		7920	duplicate

Descriptive and frequency statistics were performed on demographic data. For quantitative data, an ANOVA with repeated measures was performed for each of the dependent variables, anxiety as measured by PSS, STAI state, and STAI trait. An ANOVA, repeated measures was appropriate to compare group means since the participants were the same in each group and were measured multiple times to see changes produced by the intervention, EFT.

Repeated measures ANOVA assumes that the dependent variable is continuous, is approximately normally distributed, has sphericity, and has one independent variable. The sphericity assumption was met in the STAI-state results but violated in both the PSS and STAI-trait results. To rectify this violation, an adjustment to degrees of freedom was

made through Greenhouse-Geisser correction and sphericity was met. A traditional alpha level of .05 was chosen as the indicator of statistical significance.

A text analysis was performed through SurveyMonkey on qualitative data to identify frequently used words and phrases. In addition, qualitative data was manually reviewed for individual comments, and repeated themes were identified and categorized.

### **Timeline**

In order to meet the requirements of the capstone project on a timely basis, project activities and corresponding delivery dates were placed into a proposed timeline as defined in Table 4. This timeframe allowed for the efficient completion of the project, while also allowing for minor delays in some activities. The majority of activities from the writing of the first three chapters through the pilot preparation met the timeline. Due to concerns about the availability of students for recruitment during the summer months, the pilot was delayed until August. The pilot was delayed again due to the closing of the school during a major event in the region and rescheduled for mid-September; this further delayed the following activities of data cleaning and data analysis. Project implementation and all remaining activities met original timeline projection.

Table 4

*Activity Sequence and Proposed Timeline*

Activity	Start	End
Chapters 1-3 completed	8/20/11	12/10/11
Practicum contract submission /approval	11/10/11	12/05/11
Meet with student success center coordinator	10/15/11	11/15/11
Register/complete CITI training	11/15/11	1/21/12
Present proposal to GWU faculty, Chair	2/1/12	2/14/12
Submit proposal/receive IRB approval @ GWU/CHS	2/14/12	4/15/12
Attend EFT Level 1 training	3/15/12	3/19/12
Pilot preparation (consent, demographic form, instruments)	1/20/12	4/15/12
Pilot study*	6/01/12	7/1/12
Compile, clean run data*	7/15/12	8/10/12
Analyze data*	8/01/12	8/20/12
Modify and implement project	8/15/12	10/25/12
Evaluate project	12/1/12	2/28/12
Complete project write up	2/25/13	4/01/13
Prepare and present Capstone Project	4/01/13	4/15/13

\*Denotes activities that were delayed from original timeline

### **Budget**

This project required some basic resources for successful execution. In order to provide a consistent and skilled instruction of EFT to participants, the project

administrator attended an EFT workshop. As part of the implementation of EFT in the student success center, the project administrator recorded an instructional video. For the three introductory sessions, light refreshments were offered. With the use of college resources there was no cost associated with the video recording.

Although there was no cost for the Perceived Stress Scale (PSS), The State-Trait Anxiety Inventory (STAI) required purchasing. For a sample size of 39 participants, 195 instruments were purchased along with scoring key and license to administer. Data was collected through SurveyMonkey requiring purchasing a package with SPSS down load capability. This was an unanticipated cost.

A six month license of SPSS was purchased for data analysis. There was no cost incurred for statistician consultation. Study participants received a Target gift card of \$20.00 for complete participation in the pilot study. Additional information on the cost of resources is provided in Table 5.

Table 5

*Required Resources*

Resource	Cost
EFT Seminar	\$250.00
Light refreshments intro session	\$50.00
Recording equipment/rental	0
SurveyMonkey gold package	\$125.00
STAI tool/scoring key	\$175.00
SPSS package – 6 month	\$100.00
Statistician consult 3 hours@ \$60/hour (waived)	0
Target gift cards	\$760.00
Total	\$1460.00

### **Limitations**

There were few deviations from the proposed project. The decision to use a website for administration of the surveys and the use of SurveyMonkey as a survey engine were made post project proposal. Confidentiality was maintained by giving only pilot participants website access, requiring a unique project ID and managing the timely opening and closing of surveys. Both these tools provided much needed efficiency and organization in survey access and data capture. Using SurveyMonkey for data collection improved the quality of the data by minimizing missing data.

### **Summary**

A needs assessment supported the findings of the literature that nursing students experienced significant anxiety. Using a convenience sample, a pilot study incorporating a within subjects pretest posttest design was initiated using two valid and reliable instruments. The pilot study also included a small qualitative component. Human subjects were protected through the IRB process, maintenance of confidentiality, de-identification of data, and informed consent. Both quantitative and qualitative data were collected with the use of a survey engine, and there were no problems with incomplete or missing data within instruments. Quantitative variables and instruments were renamed as necessary to provide accuracy and consistency across weeks of measurement. Qualitative data was categorized and analyzed for themes. Although there were no missing data variables within surveys, there were weeks where surveys were missing for some participants. Cases with evidence of duplication or absence of a complete set of surveys were excluded from the sample. Some parts of the timeline were delayed, but overall the project was completed on a timely basis. Costs were slightly over budget due to unforeseen data

collection costs and better than expected participant recruitment and retention.

## **CHAPTER IV**

### **Results**

The purpose of the project, The Effect of Emotional Freedom Technique on Stress and Anxiety in Nursing Students, was two-fold. First, a study was done to determine the efficacy of Emotional Freedom Technique (EFT) in decreasing anxiety and stress in nursing students enrolled in an associate degree nursing program. Secondly, the project established access to this technique through the student success center, a college department which provides tutoring, academic support and other student resources.

#### **Sample Characteristics**

There were thirty nine (n=39) initial participants in the pilot study. One participant dropped out before the second week of the study due to increased anxiety and desire to seek professional help. The remaining 38 participants continued in the pilot through its duration of four weeks. A duplicate case was also removed from the demographic data sample adjusting the final demographic data sample data to 37. The sample consisted of 33 females and four males with an average age of 34. Marital status reflected 37.8% married and 62% single. Most (62%) were employed, with 40.5% working 16-30 hours per week. Highest level of education varied, with the majority of the sample already having a baccalaureate degree (54%), 16.2 % having a graduate degree, 8% with an associate degree, and 16.2% with previous college and no degree. Only 5.4 % listed their highest level of education as a high school diploma or GED. The majority of students were in the intermediate level of the nursing program (51.3%), with 37.8% in the fundamental level, and 10.8% in the advanced level. Average GPA range was self-reported and results were 3.5-4.0 (54%), 32.4% in the 3.0-3.5 range, 10.8% in the 2.5 to



3.0 range and 2.7% in the 2.0-2.5 range. A summary of the sample's demographic data is provided in Table 6.

Table 6

*Demographic Data*

Gender	Marital status	GPA	Employment	Program Level	Highest education
33 F	37.8%	3.5-4.0	62% employed	37.8% F	54% bachelors
4 M	married	54%		51.3% I	8% associate
	62% single	3.0-3.5	40.35% @16-30 hrs/wk	10.8%A	16.2% graduate
		32.4%			16.2% prev. college
		2.5-3.0			5.4% HS/GED
		10.8%			
		2.0-2.5			
		2.7%			

## Major Findings

### Quantitative Analyses

The hypothesis, nursing students participating in EFT will have reduced anxiety relative to baseline as measured by the Perceived Stress Scale; the State-Trait Anxiety Inventory was supported by quantitative data. A repeated measures ANOVA was performed comparing baseline, week 2, and week 4 for each of the quantitative instruments, the PSS, STAI state, and STAI trait.

**PSS results.** Descriptive statistics for the repeated measures ANOVA for the sample (n=31) demonstrated a decrease in PSS score mean from baseline of 23.87 (std. deviation 6.51) to 20.71 (std. deviation 6.17,  $p=.05$ ) in week 2 and 18.19 (std. deviation 6.86,  $p=.05$ ) in week 4. This represents a 23.8 % decrease in anxiety as measured by PSS. Descriptive statistics results are presented in Table 7.

Table 7

*Descriptive Statistics PSS Baseline, week 2 and week 4,  $p=.05$*

PSS score	Mean	Standard Deviation	N
Baseline	23.87	6.51	31
Week 2	20.71	6.17	31
Week 4	18.19	6.86	31

Mauchly's test of sphericity, an important assumption for ANOVA, was violated (significance of the approximate Chi-square of 9.18 is .010, a significance level  $< 0.05$ ) and so a Greenhouse-Geisser correction to degrees of freedom was applied. Greenhouse-Geisser correction values demonstrated that the mean scores for PSS week comparisons were statistically significantly different ( $F(1.6, 47.2) = 24.59, P < 0.0005$ ). Results are demonstrated in Table 8.

Table 8

*Analysis of Variance for PSS*

Source	<i>df</i>	<i>F</i>	<i>Mean square</i>	<i>p</i>
Within subjects				
Week (Greenhouse-Geisser)	1.57	24.59	318.94	.000
Week (Greenhouse-Geisser)	47.196		12.97	

The Bonferroni pairwise comparison tests (Table 9) demonstrated that the difference in means from week 0 (baseline) to week 2 of 3.16, is significant ( $P=.000$ ).

The mean difference is also significant week 2 to week 4 of 2.52, ( $P=.007$ ). The difference in means from week 0 (baseline) to week 4 is 5.68 and is significant ( $P=.000$ ).

Table 9

*PSS Pairwise Comparisons with Bonferroni Correction (week 0=baseline)*

Week	Mean difference	Std. Error	Sig.	95% Confidence Interval for difference	
				Upper/	Lower
0 2	3.16	.646	.000	1.52	4.80
0 4	5.68	.995	.000	3.15	8.2
2 0	-3.16	.646	.000	-4.8	-1.52
2 4	2.52	.753	.007	.606	4.43
4 0	-5.68	.995	.000	-8.20	-3.15
4 2	-2.52	.753	.007	-4.43	-.61

A profile plot demonstrates the difference in means over the 4 week period in figure 3

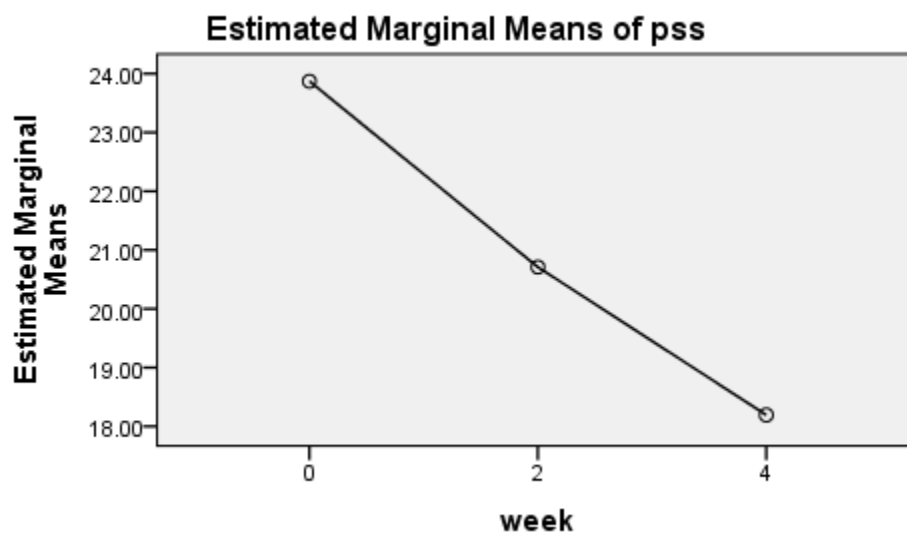


Figure 3. Estimated marginal means of PSS from baseline through week 4.

**STAI state results.** Descriptive statistics for the sample (n=30) demonstrated a decrease in mean from baseline of 38.13 (std. deviation 10.03) to 34.8 (std. deviation 10.78) in week 2 and 25.1 (std. deviation 7.42) in week 4. This represents a 34.2% decrease in anxiety as measured by STAI state. Descriptive statistics results are presented in Table 10.

Table 10

*Descriptive Statistics STAI State, Baseline, week 2 and week 4, p=.05*

STAI state score	Mean	Standard Deviation	N
Baseline	38.13	10.03	30
Week 2	34.8	10.78	30
Week 4	25.1	7.42	30

Mauchly's test of sphericity for STAI state, with in subjects effect ( $P = .860$ ) was not found to be statistically significant ( $p > .05$ ) and the sphericity assumption was not violated. The observed  $F$  value was statistically significant,  $F(2, 58) = 22.22, p < .001$ , partial eta squared = .434. ANOVA results for STAI state are provided in Table 11.

Table 11

*Analysis of Variance for STAI State*

Source	<i>Df</i>	<i>F</i>	<i>Mean square</i>	<i>p</i>
Within subjects				
Week	2	22.22	1375.34	.000
Error(week)	58		61.91	

Bonferroni pairwise comparison tests suggested that although there was a decrease in anxiety from week 0 (baseline) to week 2 (Mean difference 3.33) this change was not significant ( $p = .330$ ). However, when comparing week 2 to week 4, a mean difference of 9.7 was found to be significant ( $p < .05$ ). Furthermore, when comparing week 0 (baseline) to week 4, the mean difference of 13.03 was significant ( $p < .05$ ) (Table 12).

Table 12

*STAI state Pairwise Comparisons with Bonferroni correction (week 0=baseline)*

Week	Mean difference	Std. Error	Sig	95% Confidence Interval for difference	
				Upper	Lower
0 2	3.33	2.02	.330	-1.80	8.47
0 4	13.03	1.94	.000	8.09	17.97
2 0	-3.33	2.02	.330	-8.47	1.8
2 4	9.7	2.13	.000	4.30	15.1
4 0	-13.03	1.94	.000	-17.97	-8.09
4 2	-9.7	2.13	.000	-15.1	-4.3

A profile plot (Figure 4) demonstrates the difference in means for the STAI state over the 4 week period.

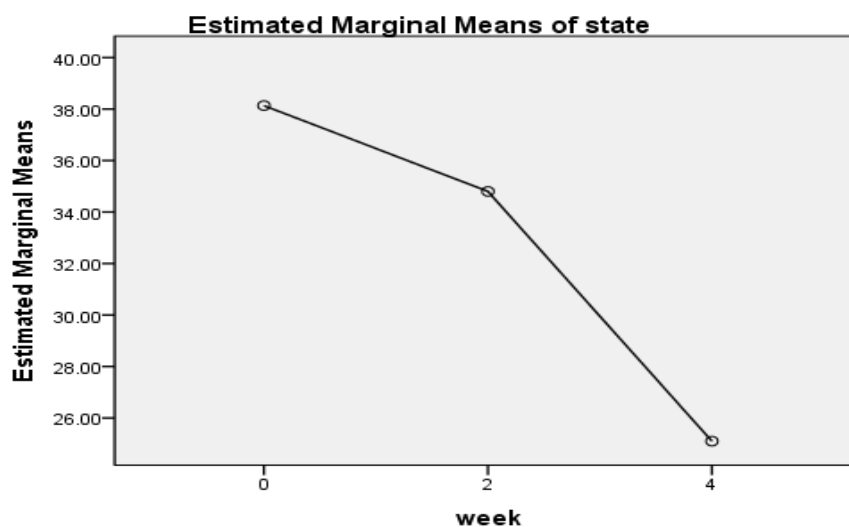


Figure 4. Estimated marginal means of STAI state, from baseline through week 4.

**STAI trait results.** Descriptive statistics for the sample (n=30) demonstrated a decrease in mean from baseline of 37.87 to 34.73 in week 2 and 30.33 in week 4. Overall, this represents 19.9% decrease in anxiety when comparing baseline to week 4.

Descriptive statistics results are presented in Table 13.

Table 13

*Descriptive Statistics STAI Trait, Baseline, week 2 and week 4, p=.05*

STAI trait score	Mean	Standard Deviation	N
Baseline	37.87	11.69	30
Week 2	34.73	10.67	30
Week 4	30.33	8.12	30

As demonstrated in Table 14, Mauchly's test of sphericity was found to be significant ( $p=.009$ ) and the sphericity assumption had been violated. With a correctional adjustment made to degrees of freedom through Greenhouse-Geisser, mean scores for anxiety were statistically significantly different ( $F(1.56, 45.19) = 20.48, p < 0.0005$ ).

Table 14

*Analysis of Variance for STAI Trait*

Source	<i>df</i>	<i>F</i>	<i>Mean square</i>	<i>p</i>
Within subjects				
Week (Greenhouse- Geisser)	1.56	20.48	551.49	.000
Week (Greenhouse- Geisser)	45.19		26.93	

Bonferroni adjustments for multiple comparisons ( $p < .05$ ) demonstrated a decrease in anxiety from week 0 (baseline) to week 2 (Mean difference 3.13) and this change was significant ( $p = .019$ ). A comparison of week 2 to week 4 also demonstrated a decrease in trait anxiety (mean difference 4.4) and this change was statistically significant ( $p = .000$ ). The comparison of week 0 (baseline) to week 4 also demonstrated a decrease in trait anxiety (mean difference 7.53) and this change was also significant ( $p = .000$ ). These results are displayed in Table 15.

Table 15

*STAI Trait Pairwise Comparisons with Bonferroni Correction (week 0=baseline);  $p = .05$*

Week	Mean difference	Std. Error	Sig	95% Confidence Interval for difference	
				Upper/	Lower
0 2	3.13	1.07	.019	.421	5.85
0 4	7.53	1.46	.000	3.82	11.24
2 0	-3.13	1.07	.019	-5.85	-.421
2 4	4.4	.961	.000	1.96	6.84
4 0	-7.53	1.46	.000	-11.24	-3.82
4 2	-4.4	.961	.000	-6.84	-1.96



A profile plot (Figure 5) demonstrates the difference in means over the 4 week period.

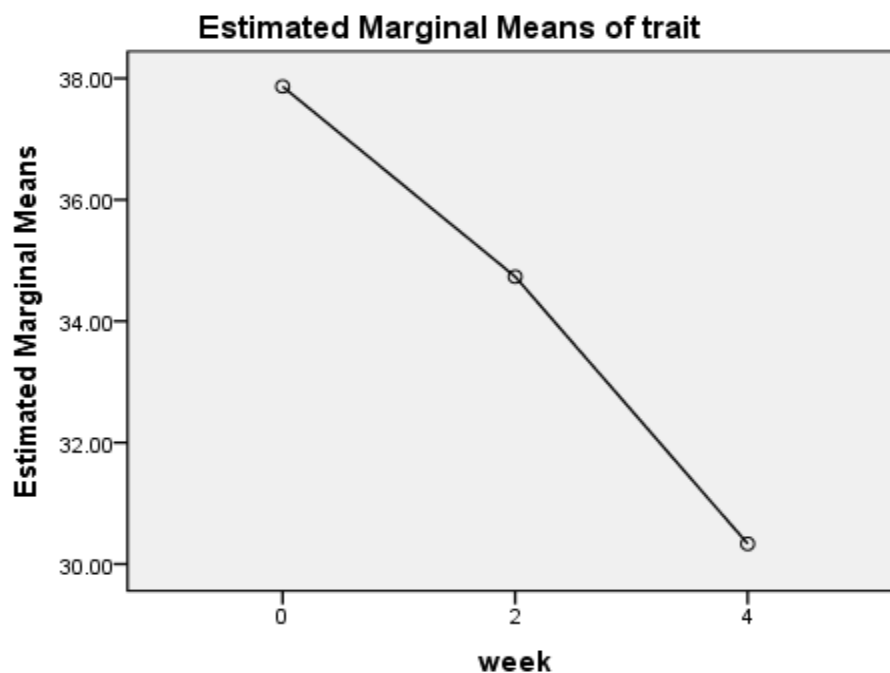


Figure 5. Estimated marginal means of STAI trait, from baseline through week 4.

### Qualitative Data

The hypothesis, nursing students participating in EFT will have reduced anxiety relative to baseline as measured by the Perceived Stress Scale, the State-Trait Anxiety Inventory and a qualitative survey was supported by qualitative data. Qualitative data, as measured by the self-report of nursing students in a six item questionnaire, supported a perceived reduction in anxiety and stress. Response rate was 100% on all seven questions. For the question, “*Did you experience any changes in mood or feelings immediately after using the technique*” a text analysis revealed that 87% of the students felt calmer, more relaxed after using EFT. Comments included:

- “I felt a decrease in moods of tension and anxiety, and an increased feeling of control over the present situation I was in.”
- “I was not as anxious and it transferred to not being in a bad mood.”
- “EFT did calm me down when I used it 15-30 minutes before a test.”

In addition to the feelings of increased calm and relaxed, 17% reported that the technique helped them sleep:

- “This technique worked especially well when I woke up during the night (which happens rarely, but is annoying.). I would do EFT and go right back to sleep.”
- “Yes. I felt calm, sleepy, and relaxed. Most of the time, when I use EFT at night, I fall right asleep afterwards.”

For the question, “*Did you experience any reduction in anxiety or stress immediately after using EFT? If so how did you experience the change (decreased heart rate, less agitation, etc.)?*” most participants (82%) described an immediate calming, relaxing or less tension:

- “I feel a sense of calm and relaxation after using the technique as many times as it took to take my mind off of the stress and anxiety.”
- “Right away. It was very effective in reducing my stress in minutes.”
- “Yes, I was almost always instantly calmer after 1 or 2 rounds of doing it.”

Many participants (51%) also reported a decrease in somatic symptoms:

- “Yes, decreased heart rate and decreased "tightening" or weight in the pit of my stomach.”
- “Yes. Less pressure in my chest.”
- “I could feel this relief with the reduction of tension in my jaw, my heart rate would decrease, and I could feel the tension leave my shoulders and neck.”

For this same question some (10%) also reported an increase feeling of control:

- “More in control, breathing slowed (HR).”
- “Yes, I felt calmer and more in control of the current situation immediately after doing EFT.”
- “I felt that using EFT gave me a perceived feeling of control and security.”

For the question, “*After the four weeks of using EFT, did you experience any overall change in mood or feeling?*” 38% reported that their mood had not changed but they did find EFT to be an effective tool for decreasing anxiety:

- “Not really. I feel it worked better for me as an acute therapeutic tool.”
- “Not particularly, I felt the technique worked to temporarily relieve stress; I don't think I experienced an overall change in mood.”
- “I still experience worries and nervousness however EFT has provided a way to relieve those feelings, at least temporarily and provides a way to better control and manage those feelings.”

In contrast 33% reported that EFT might have impacted their mood:

- “I believe that my mood has improved since beginning EFT.”
- “Yes, I felt happier. I feel that I am an easier going person.”
- “I changed to more of a positive mood/feeling while using EFT.”

In addition, 20% of the participants were not sure:

- “My overall mood has not been drastically changed, although I would say that my overall attitude has improved greatly and I am more successful at being positive on a daily basis since practicing EFT.”
- “It is really hard to say because I have so many other things going on right now. I have had some personal issues this past month and I have a final coming up.”
- “I feel great, but I don't know if that is because of EFT.”

In the next inquiry, “*After four weeks of using EFT did you experience any overall change in feelings of anxiety or stress? If so, how did you experience the change (decreased heart rate, less agitation, etc.)*”, 56% of participants admitted to experiencing less stress and anxiety after four weeks of using the technique. Comments included:

- “I would say overall I am somewhat less anxious and stressed because things don't seem to make me upset quite as easily or quickly.”
- “Slightly. I feel calmer.”
- “Levels of anxiety have gone down to a more tolerable rate.”

A large number of respondents (43%) also reported that they were better able to cope after 4 weeks:

- “I feel more empowered to tackle my stress level and confident that going forward I will use the tool to keep my stress levels at a more comfortable level.”
- “I felt like I still had stress but it was better controlled using EFT.”
- “EFT enabled me to experience a temporary relief of stress and anxiety.”

Some participants (12%) reported no change in stress and anxiety over the four weeks:

- “I don't believe so. My heart rate and breathing become increased when I get anxious.”
- “No change. I do not wrestle with anxiety very much.”
- “I don't think overall but I was able to use EFT to reduce my stress in immediate situations”.

For the question, “*Are there any other feelings or experiences you would like to comment on regarding your practice of EFT?*”, 82 % of participants provided positive comments about their experience with the technique; some of these include:

- “I would say it's definitely worthwhile to have in ‘your tool bag’ as a way to lessen anxiety as it's quick & easy to incorporate into one's daily routine.”
- “I feel much more able to manage my anxiety. Even though I still feel anxious at times, I calm down more quickly.”

- “I feel like I know have a secret weapon against stress. It really helps me relieve the stress and tensions. It has been a great help.”

These results are presented in Table 16.

Table 16

*Qualitative Questionnaire Categories and Themes*

Category	Thematic category	Response %	Sample responses
Ease of technique	Easy	89%	“It was easy but the challenge was to remember when to incorporate it.” “Fairly easy the most difficult part was finding a quiet place in the middle of the day.”
	Difficult to remember	5%	“It was a little difficult at first to remember to actually use the technique during times of stress but eventually it became second place to start tapping once I started feeling out of whack”
	Difficult then easy	2%	“Time consuming at first but it got easier.”
	Not easy, difficult	2%	
Changes in mood/feelings immediately	Calm relaxed less stressed	87%	“It was kind of difficult. I was around people a lot and often when I was stressed I was in the middle of doing something and forgot to try the EFT.”
	Able to sleep	17%	“I felt a decrease in moods of tension and anxiety, and an increased feeling of control over the present situation I was in.”
	In control Less somatic	2%	“Yes, I would use this when I couldn't fall asleep and would help to fall asleep within next few minutes.”
	Minimal to no change	2%	“yes, much more relaxed and in control.”
	No change	2%	“Yes. I felt that I carried less tension in my chest after doing it.” “I didn't feel it right after, but the tapping is a good distraction. It took several times to feel differently.” “I did not.”

Category	Thematic category	Response %	Sample responses
Immediate reduction in stress	Calm, relaxed, less tense	82%	“Right away. It was very effective in reducing my stress in minutes.”
	Less somatic feelings	51%	“Yes, decreased heart rate.” “Yes, felt the knot in my stomach unwind.”
	Greater control	10%	“While my anxiety was not completely eliminated at any part during the study, I felt that using EFT gave me a perceived feeling of control and security.”
Changes in anxiety/stress after 4 weeks	Less stressed and anxious	56%	“I felt that I became less anxious and irritated over the past 4 weeks by using EFT.”
	Better able to cope, more control	43%	“I am able to recognize when I feel more stress and able to use the EFT technique to reduce it.”
	No change	12%	“Don’t believe so. My heart rate and breathing become increased when I get anxious.”
Changes in mood after 4 weeks	No change in mood but good tool for coping, control	38%	“Not really. I feel it worked better for me as an acute therapeutic tool.” “I am in control of my feelings and can bring myself down.”
	Yes, more relaxed, happy	33%	“Overall I feel more relaxed and more able to deal with the amount of stress I experience in nursing school.”
	Maybe	20%	“I feel great, but I don't know if that is because of EFT.”
	No	7%	“I don't believe so.”
Other feelings or experiences with EFT	Positive comments	82%	“I plan on continuing to use it.” “Make this a requirement for nursing students!” “I thought it was an easy free way to reduce stress.”
	No comment	17%	“

## Summary

A sample of 39 participants was included in a pilot study to understand the effect of Emotional Freedom Technique on stress and anxiety in nursing students. One participant resigned from the study after the second week leaving 38 participants remaining. Data was cleaned of duplicate ID numbers leaving a final sample of 37. The hypothesis, nursing students participating in EFT will have reduced anxiety relative to baseline as measured by the perceived Stress Scale, the State-Trait Anxiety Inventory, and a qualitative survey was supported with qualitative data. The qualitative results included 89% reporting ease of use, 87% reporting an increase in calmness and relaxation, and 53% reporting less somatic symptoms of stress. Other minor themes included an increase in control over anxiety, improved ability to fall asleep and better coping.

Quantitative data also supported the hypothesis that nursing students participating in EFT would have reduced anxiety relative to baseline as measured by the Perceived Stress Scale and the State-Trait Anxiety Inventory. Overall PSS scores demonstrated a decrease of 3.16 points between baseline and week 2 and a decrease of 5.68 points between baseline and week 4. This represents a 23.8% decrease in anxiety over 4 weeks as measured by PSS. Applying the Greenhouse-Geisser correction, the decrease in PSS scores were found to be statistically significantly different ( $F(1.57,47.2)=24.59$ ,  $P<0.0005$ ).

STAI state data also demonstrated that anxiety and stress reported by nursing students decreased when comparing pretest levels to week 2 and week 4 posttest levels.

Overall STAI state scores demonstrated a decrease of 3.33 points between baseline and week 2 and a decrease of 13.03 points between baseline and week 4. This represents a 34% decrease in anxiety over 4 weeks as measured by STAI state. With Mauchly's test of sphericity assumed, the decrease in STAI state scores, baseline compared to week 4, were statistically significantly different between time points ( $F(2, 58) = 22.22, P < 0.0005$ ).

STAI trait data also demonstrated that anxiety and stress reported by nursing students decreased when comparing pretest levels to week 2 and week 4 posttest levels. Overall STAI trait scores demonstrated a decrease of 3.14 points between baseline and week 2 and a decrease in 7.54 points between baseline and week 4. This represents a 19.9% decrease in anxiety over 4 weeks as measured by STAI trait. With a Greenhouse-Geisser correction mean scores for STAI trait were found to be statistically, significantly different between time points ( $F(1.56, 45.19) = 20.48, P < 0.0005$ ).



## **CHAPTER V**

### **Discussion**

The purpose of the project, The Effect of Emotional Freedom Technique on Stress and Anxiety in Nursing Students, was two-fold. First, a study was done to determine the efficacy of Emotional Freedom Technique (EFT) in decreasing anxiety and stress in nursing students enrolled in an associate degree nursing program. Secondly, the project established access to this technique through the student success center, a college department which provides tutoring, academic support and other student resources. Access to this intervention and its ease of self-administration, provides nursing students with one more tool for managing the stress they experience, regardless of its cause.

### **Implications of Findings**

Both qualitative and quantitative statistical analysis supported the pilot hypotheses, that nursing students participating in EFT would have reduced anxiety relative to baseline as measured by the Perceived Stress Scale, the State-Trait Anxiety Inventory, and a qualitative survey. The qualitative data provided participant feedback rich in expression of improved feelings of calm, relaxation, and diminished agitation and tension. Notably some participants also identified a decrease in negative somatic symptoms, as well as an improved ability to fall asleep. Most participants also described that the technique provided them with a feeling of control over stress and anxiety, another tool for stress management and coping.

For PSS data, the reduction in self-reported stress was profound with a mean difference baseline to week 4 of 5.677 ( $p < .005$ ). PSS data supported claims in the literature that the stress experienced by nursing students is greater than that reported by

the female population in general (Baldwin, 1999; Beck et al., 1997; Rhead, 1995). This is strongly reflected in PSS results where baseline PSS measurement of stress in this sample (mean 23.877, std. deviation 6.50508) was considerably higher than Cohen's (1994) reported PSS normative means for women (mean 13.7, std. deviation 6.6).

Conversely to PSS, STAI state results for baseline anxiety (mean 38.1333, std. deviation 10.02663) were just below Spielberger's (1983) normative values for females (mean 38.76, std. deviation 11.95) and did not reflect the claim in the literature that the stress experienced by nursing students is greater than members of the general female population. Most importantly and similar to PSS results, for STAI state data, reduction in anxiety when comparing baseline to week 4 was also profound with a mean difference of 13.033 ( $p < .005$ ). STAI trait results for baseline anxiety (mean 37.866, std. deviation 11.68770) are also just below Spielberger's (1983) normative values for females (mean 40.40, std. deviation 10.15). Similar to PSS and STAI state results, the reduction in STAI trait scores baseline compared to week 4 was also considerable with a mean difference of 7.533 ( $p < .05$ ). This result is surprising and differs with expectations and results in the literature, since trait anxiety is expected to be more stable over time.

Galbraith and Brown (2011) in their exhaustive literature review of successful interventions for managing stress in nursing students, identified that the most successful interventions had a strong theoretical basis and included, "cognitive reappraisal of maladaptive cognitions, as well as relaxation" (p.718). Although the exact mechanism behind EFT has not been identified, Church (2010) suggests that the tapping of meridian points with a focus on the feared object or negative emotion provides desensitization to the fear. In addition, according to Church the repetition of a statement of self-acceptance,

contributes to cognitive restructuring. Craig (2010) also explains that tapping points relieve stress and through the application of a non-traumatic physical stimulus while introducing the fear with the self-acceptance, interrupt the negative somatic response that is associated with that memory and all similar memories. Both of these explanations support Galbraith and Brown's suggestion that cognitive reappraisal and relaxation play a key role in effective stress management techniques.

The literature suggests that EFT has been shown to significantly decrease anxiety, and feelings of distress in a variety of populations and settings. These settings and conditions included veterans, phobic individuals, athletes, individuals diagnosed with fibromyalgia and others. Both qualitatively and quantitatively, the results of this pilot study support that EFT may also decrease the feelings of stress and anxiety experienced by nursing students as well as offer them a means for coping or give them some measure of control over existing anxiety.

### **Application to Theoretical/Conceptual Framework**

Lazarus's Transaction Model of Stress, Appraisal, and Coping was chosen as a theoretical framework for this study. Pilot results support the value of EFT as a coping mechanism in reducing stress and anxiety. EFT as a coping technique provided a significant decrease in stress and anxiety as measured by participants' subjective reports, and the PSS and STAI. As some participants reported, "I am able to recognize when I feel more stress and able to use the EFT technique to reduce it" and others stated "I am in control of my feelings and can bring myself down."

Lazarus also described that cognitive appraisal and coping are two important processes that mediate the relationship between the person and the environment. In the

pilot study, EFT applies both these processes, requiring the person to appraise the stressor by rating the amount of stress perceived and then apply the verbal affirmation and tapping sequence as a coping method.

Lazarus's Transaction Model of Stress, Appraisal and Coping states that as a result of coping, short term and long term outcomes are generated and manifested in the form of social functioning, morale, and somatic health. Pilot results demonstrated that participants experienced both immediate short term reduction in anxiety but also some reduction in somatic symptoms (decreased heart rate, ability to fall asleep). More long term relief of anxiety was demonstrated by a decrease anxiety scores over four weeks for PSS and STAI. Improved moral and social functioning was demonstrated subjectively by participant reports of feeling more relaxed and more in control of their reaction to stress.

### **Limitations**

The pilot study did have a number of limitations, one of which is its small sample size (n=39) which limits the ability to apply study results to the general population. There was also potential for selection bias due to convenience sampling. This selection or sampling bias, inherent to convenience sampling, was accepted in this study with the knowledge that it also decreased the ability to apply the study results to the general population. In addition, the nature of nursing being a profession dominated by females, persons of male gender were diminished from the sample. This again represents a selection bias and limits the ability to generalize study results across genders. Attention bias may also have been a limiting factor since participants were aware of their involvement, and the study hypothesis. As a result of this bias, participants may have given a more favorable response when responding to the instruments. Participants were

all familiar with the project administrator as a current or former instructor. This could potentially influence participants providing a more favorable response to instrument questions. However, the 98% study retention rate suggests that the efficacy of the EFT was instrumental in keeping participants engaged.

Another limitation of the study was the loss of data due to duplicate project ID numbers. In the study design, participants were allowed to pick their own project ID and encouraged to use the last four digits of their social security number. It appeared when reviewing data, that at least two participants chose the same project ID, destroying the unique status of the identifier even though the data may have been unique. Assigning project IDs and using a recognition process for only allowing valid Project IDs would diminish loss of data due to fear of potential duplication.

### **Implications for Nursing**

EFT can be another tool for successful stress management and anxiety relief in nursing students. Effective stress management has three major potential implications, improved physical health, improved feelings of well-being and self-efficacy, and improved academic and professional retention. Stress and anxiety have been found to produce or contribute to a variety of somatic disorders including altered immune functions, hyperglycemia, hypertension, atherosclerosis, gastrointestinal disturbances, insomnia and more. Stress management and coping methods have the potential to decrease physical symptoms as well as stress-related disease.

Improved feelings of well-being and self-efficacy promote psychological health and hardiness. The psychologically hardy individual is better able to cope and endure the certain stressors of academics and later, the professional environment. Utilization of

effective stress management techniques has the potential to decrease attrition and positively influence retention of nursing students. Improved academic and professional retention is critical in nursing and in healthcare. With the predictions for an unprecedented nursing shortage looming in the next ten years, attracting and retaining competent candidates for nursing is imperative. Furthermore, to succeed in today's healthcare environment the nurse must be resilient. Arming students with effective coping techniques increases their chances for successful health maintenance and professional longevity as they move from academics to practice.

Beyond efficacy, the simplicity and immediacy of EFT for individuals are two of its greatest attractions. The technique can be taught quickly and then practiced by the individual without delay. There is no need for frequent therapist intervention or the cost associated with it. Even more important, therapeutic effects have been reported to occur quickly, perhaps even instantaneously after performing the technique.

Stress and anxiety have been identified in the literature as having a potential detrimental effect on all individuals. Students, and especially nursing students, are at particular risk due to academic performance expectations as well as financial and personal stressors. Some studies have identified an inverse relationship between stress and academic performance although this finding has been inconsistent.

Finally, the high retention rate of 97% is of note since this is exceptional in most research. Possible reasons for this include, the structure of having students meet face to face to complete surveys, the scheduling of sessions at a time and location convenient for participants, and the project administrators flexibility in rescheduling sessions with students who missed a session. It may also suggest that participants were experiencing

enough benefit from the technique that the desire to continue in the pilot was strengthened. The incentive of a Target gift card and leadership of the pilot sessions by a faculty member that students were familiar with, likely contributed to retention as well.

### **Recommendations**

For the pilot component of this project, recommendations for future studies on the effect of EFT in relieving stress and anxiety in nursing students include a larger sample size, greater inclusion of males, randomization of sample, blind control study design, specific project ID assignment, and administration of the pilot by a non-faculty member. Although appropriate for a pilot study, the smaller sample size limits the ability to generalize the results of this study across the general population. Greater inclusion of male gender is an additional recommendation that might provide a better understanding of the gender specific experience of stress and anxiety. The self-selection of participants in the sample is a potential bias and may have influenced pilot results. Randomization and perhaps the addition of a control group would improve study design. The assignment of specific project ID codes and automatic database verification of the codes might protect against duplicate code selection by participants. The administration of the pilot by a faculty member may have influenced some students to report more positive results due to the desire to please or gain faculty approval.

Further studies need to be done to better understand and document the effect of EFT on stress and anxiety. These studies should demonstrate good research design, including randomized controls, and consistent instruction on the standard EFT technique. The use of valid, reliable quantitative instruments such as the PSS, STAI, and others will provide data that maybe more acceptable to the scientific community. Examining the

effect of EFT on stress and anxiety and its subsequent impact on academic performance such as grades, GPA, retention, or graduation rate would certainly provide additional value to students and college administrators. Opportunities for follow up studies include evaluating the more long term effect of the technique on the same cohort of student participants over time. Investigating how EFT may have influenced other aspects of life or self-perception for the same participant cohort would also be of interest

Although implemented in the student success center in October of 2012, the project component of the project, the establishment of EFT in the Student Success Center has had only one student participant. This may reflect the winding down of the semester, the lack of student perception of the student success center being a resource center for stress or the absence of visibility or awareness of EFT by students. To improve awareness and utilization, recommendations include continuing the monitoring the frequency of EFT use by the student population, review of coordinator and student evaluations of the technique, increasing faculty awareness of the technique through college information meetings, encouraging faculty referral, advertisement in student newsletter and student news board, and increasing availability beyond the nursing student body to other healthcare students.

### **Conclusion**

The purpose of this study was to determine the efficacy of EFT in decreasing anxiety and stress in a convenience sample of nursing students enrolled in an associate degree nursing program. Utilizing a one group pretest-posttest design, participants received group instruction in the technique and were encouraged to repeat it daily. Data collection instruments included a demographic questionnaire, pretest State-Trait Anxiety



Inventory (STAI), and Perceived Stress Scale (PSS). STAI and PSS were re-administered at the second, third, and the fourth week. A qualitative questionnaire was also administered at the end of the four weeks. The pilot demonstrated an excellent participant retention rate of 97%, which may be attributed to study design as well as the perceived effectiveness of EFT by the participants.

Both qualitative and quantitative statistical analysis support the pilot hypotheses, that nursing students participating in EFT would have reduced anxiety relative to baseline as measured by the Perceived Stress Scale, the State-Trait Anxiety Inventory and a qualitative survey. The qualitative data provided participant feedback rich in expression of improved feelings of calm, relaxation, and diminished agitation and tension. Notably some participants also identified a decrease in negative somatic symptoms, as well as an improved ability to fall asleep. Most participants also described that the technique provided them with a feeling of control over stress and anxiety, another tool for stress management and coping.

For PSS data, the reduction in self-reported stress was profound with a mean difference baseline to week 4 of 5.677 ( $p < .005$ ). PSS data supported claims in the literature that the stress experienced by nursing students is greater than that reported by the female population in general. For STAI state data, reduction in anxiety when comparing baseline to week four was also profound with a mean difference of 13.033 ( $p < .005$ ). Similar to PSS and STAI state results, the reduction in STAI trait scores baseline compared to week four was also considerable with a mean difference of 7.533 ( $p < .05$ ). This result is surprising and differs with expectations and results in the literature, since trait anxiety is expected to be more stable over time.

Findings suggested that EFT can be an effective tool for stress management and anxiety relief in nursing students. The ease and convenience of the technique further enhanced by its immediate impact are valued benefits. Utilization of effective stress management techniques may improve retention of nursing students. Improved academic and professional retention is critical in nursing and in healthcare. With an unprecedented nursing shortage looming in the next 10 years, attracting and retaining competent candidates for nursing is imperative. The benefit of effective coping techniques are expected to carry over as nursing students move to practice, increasing resilience, successful health maintenance, and professional longevity.

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## EFT Universe

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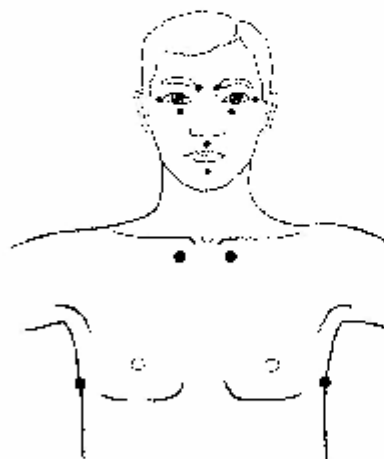
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### Emotional Freedom Techniques (EFT)

#### The Basic Recipe

1. **Where in your body** do you feel the emotional issue most strongly?
2. **Determine the distress level** in that place in your body on a scale of 0 to 10, where 10 is maximum intensity and 0 is no intensity:  
10, 9, 8, 7, 6, 5, 4, 3, 2, 1, 0
3. **The Setup:** Repeat this statement three times, while continuously tapping the Karate Chop point on the side of the hand (large dot on hand diagram below)  
*"Even though I have \_\_\_\_\_ (name the problem), I deeply and completely accept myself."*
4. **The Tapping Sequence:** Tap about 7 times on each of the energy points in these 2 diagrams, while repeating a brief phrase that reminds you of the problem.



5. **Determine your distress level** again on a scale of 0 to 10 again. **If it's still high**, say:  
*"Even though I have some remaining \_\_\_\_\_ (problem), I deeply and completely accept myself."*
6. **Repeat from Step 1** till your distress level is as close to 0 as possible.

About EFT Video (7 minutes): <http://youtube.com/watch?v=9nKY3LrTHvo>

EFT 5 minute tap along video: <http://www.youtube.com/user/kinesiologyinstitute>



## Appendix B

Carolinas Healthcare System  
Gardner-Webb University

## Nursing Student Participants Needed for Research in Emotional Freedom Technique

Participants are needed to take part in a study of the effect of Emotional Freedom Technique (EFT) on anxiety and stress in nursing students. As a participant in the study you will be asked to practice the technique, log your frequency, attend 2 practice sessions and complete some questionnaires about your experience.

Your participation involves a 45 minute introductory session and 3 additional sessions each of which takes 15-30 minutes over a period of 4 weeks. In appreciation of your time you will receive a target gift certificate for \$20. at the completion of the study.

For more information about this study or to volunteer for this study please contact:

Susan Patterson RN, MS  
Carolinas College of Health Sciences Office 122  
704 355 3464

[Susan.patterson@carolinas.org](mailto:Susan.patterson@carolinas.org)

This study has been reviewed by and received ethics clearance through office of Research Ethics, Carolinas Healthcare System, and Gardner-Webb University.

Appendix C  
 Carolinas Healthcare System  
 Gardner-Webb University

Verbal Script of Email Recruitment Tool

Hello, my name is **Susan Patterson** and I am a doctoral student in the School of Nursing at Gardner-Webb University. As part of my doctoral work I will be doing a pilot project on the effect of Emotional Freedom Technique (EFT) on anxiety and stress in nursing students. I will be working on this project with **Dr. Elizabeth Repede, PhD**. EFT is a type of energy medicine that utilizes tapping on specific acupressure meridian points to reduce anxiety. This project will hopefully lead to a better understanding of how using this technique can help control anxiety and stress in nursing students.

If you volunteer as a participant in this study, you will be asked to attend a group orientation session for approximately 45 minutes, where the study will be explained to you, you will complete 3 questionnaires, and you will be introduced to the technique. You will be asked to practice the technique daily and record your frequency in a log. You will need to return on two occasions (during week 1, and 2) for approximately 15-30 minutes to have the technique reinforced and complete additional questionnaires. After the fourth week and the completion of the study, you will be asked to return for a last 15-30 minutes session to complete the final questionnaires. There will be no cost to you other than your attendance at these sessions. In appreciation of your time and effort a Target gift certificate for \$20. will be given to participants who have completed the pilot study.

I would like to assure you that this study has been reviewed and received ethics clearance through the Carolinas Healthcare System IRB and Gardner-Webb University IRB. However, the final decision about participation is yours.

If you are interested in participating, please respond to this email with your interest and I will be in touch with you. Alternatively, you can come to my office Room 122 and see me or contact me by email [susan.patterson@carolinas.org](mailto:susan.patterson@carolinas.org)

Thank you.

**\* Individual Confidential recruitment cards normally would request the following information to be completed by potential participants:**

---

Name            Email    Phone Number    Best Days and Times

Appendix D  
Carolinas Healthcare System  
Gardner-Webb University

Newsletter and Event board announcement

Attention CCHS Nursing Students

A project on the effect of Emotional Freedom Technique (EFT) on anxiety and stress in nursing students will be performed at CCHS this fall. EFT is a type of energy medicine that utilizes tapping on specific acupressure meridian points to reduce anxiety. This project will hopefully lead to a better understanding of how using this technique can help control anxiety and stress in nursing students and maybe helpful for you in managing stress and anxiety. A Target gift certificate for \$20.00 will be given to participants who complete the study. To learn more about this opportunity, please contact **Susan Patterson 704 355 3464 or [Susan.patterson@carolinas.org](mailto:Susan.patterson@carolinas.org)**.

Appendix E  
 Carolinas Healthcare System  
 Gardner-Webb University

Verbal Script of In-Class Recruitment Tool/Follow-up Invitation

Hello, my name is **Susan Patterson** and I am a doctoral student in the School of Nursing at Gardner-Webb University. As part of my doctoral work I will be doing a pilot project on the effect of Emotional Freedom Technique (EFT) on anxiety and stress in nursing students. I will be working on this project with **Dr. Elizabeth Repede, PhD**. EFT is a type of energy medicine that utilizes tapping on specific acupressure meridian points to reduce anxiety. This project will hopefully lead to a better understanding of how using this technique can help control anxiety and stress in nursing students.

If you volunteer as a participant in this study, you will be asked to attend a group orientation session for approximately 45 minutes, where the study will be explained to you, you will complete 3 questionnaires, and you will be introduced to the technique. You will be asked to practice the technique daily and record your frequency in a log. You will need to return on two occasions (during week 1, and 2) for approximately 15-30 minutes to have the technique reinforced and complete additional questionnaires. After the fourth week and the completion of the study, you will be asked to return for a last 15-30 minutes session to complete the final questionnaires. There will be no cost to you other than your attendance at these sessions. In appreciation of your time and effort a Target gift certificate for \$20. will be given to participants who have completed the pilot study.

I would like to assure you that this study has been reviewed and received ethics clearance through the Carolinas Healthcare System IRB and Gardner-Webb University IRB. However, the final decision about participation is yours.

If you are interested in participating, please fill out one of the individual confidential recruitment cards\* and I will be in touch with you. Alternatively, you can come to my office Room 122 and see me or contact me by email [susan.patterson@carolinas.org](mailto:susan.patterson@carolinas.org)

Thank you.

**\* Individual Confidential recruitment cards normally would request the following information to be completed by potential participants:**

---

Name            Email    Phone Number    Best Days and Times

## Appendix F

### EFT Instructions

1. Scan your body – where do you feel the emotional issue (Stomach, back, head)
2. Determine on a scale of 0-10 your distress level.
3. Create a statement based on your feeling, in this case, anxiety or stress.  
“Even though I have \_\_\_\_\_ (problem), I deeply and completely accept myself”
4. **The Set Up:** Start out either at the ‘karate chop point’ or at the ‘sore spot’ and simply repeat the affirmation, with emphasis, 3 times while continuously rubbing the Sore Spot or tapping the Karate Chop point. After a few practice rounds, you should be able to perform The Setup in 8 seconds or so.
5. **The Sequence:** Now, with The Setup properly performed, you are ready for the next ingredient in The Basic Recipe....The Sequence.

#### **Tapping Instructions:**

You can tap with either hand but it is usually more convenient to do so with your dominant hand (e.g. right hand if you are right handed).

Tap with the fingertips of your index finger and middle finger. This covers a little larger area than just tapping with one fingertip and allows you to cover the tapping points more easily.

Tap about 7 times on each of the tapping points.

Most of the tapping points exist on either side of the body. It doesn't matter which side you use nor does it matter if you switch sides during The Sequence. For example, you can tap under your right eye and, later in The Sequence, tap under your left arm

EB = Beginning of the EyeBrow  
 SE = Side of the Eye  
 UE = Under the Eye  
 UN = Under the Nose  
 Ch = Chin  
 CB = Beginning of the CollarBone  
 UA = Under the Arm  
 UB = Under the Breast  
 Th = Thumb  
 IF = Index Finger  
 MF = Middle Finger  
 LF = Little Finger  
 KC = Karate Chop

6. Determine your distress level ( 0-10) again and repeat sequence if needed.

## Appendix G

### Introductory Session

Pilot Study: The Effect of Emotional Freedom Technique on Stress and Anxiety in Nursing Students

#### Introductory Session Agenda and Teaching Plan

- Objectives:
1. Provide an overview of pilot study and participant role.
  2. Provide information on EFT, procedure and pilot application.
  3. Obtain informed consent and initial data.
  4. Provide students with an opportunity to practice the technique.
  5. Communicate the need for confidentiality of participants and safety plan.

Outline:

1. Explain history and overview of the development of the technique.
2. Give overview of pilot study, review informed consent, right to discontinue study at any time, de-identification of study data, and study protocol. Answer questions and have participants sign consent. Remind participants of maintenance of confidentiality regarding the identity of other participants in the study.
3. Have participant's complete demographic questionnaire, STAI and PSS.
4. Provide explanation, demonstration and written guide to performing technique (The EFT Mini-manual, Basic Recipe, pp.22-36; EFT Basics).
5. Have participants practice technique in teams of two.
6. Give participants feedback as they practice the technique.
7. Reinforce need to practice technique daily, record in log.
8. Remind students of dates and times for Week 1 and Week 2 follow up sessions including instrument completion. Remind student of 4<sup>th</sup> week final session and instrument completion.
9. Reinforce safety plan, contact information.

## Appendix H

**CAROLINAS HEALTHCARE SYSTEM**  
**CONSENT TO PARTICIPATE IN A RESEARCH STUDY**

*The Effect of Emotional Freedom Technique on Stress and Anxiety in Nursing  
Students*

**INTRODUCTION**

Susan Patterson, a registered nurse, is asking you to participate in this research study of Emotional Freedom technique (EFT) at Carolinas College of Health Sciences and Carolinas HealthCare System (CHS). You are being asked to take part because you are a nursing student in a two year associate degree nursing program. The purpose of this study is to evaluate the effect of Emotional Freedom Technique (EFT) on stress and anxiety in nursing students. EFT is a technique that utilizes the tapping of acupressure points with a verbalization of a feared object and a statement of affirmation used to produce a decrease in anxiety and stress. You will be one of approximately 30 people involved in this research project at CHS, and your participation will last for one month.

**HOW THE STUDY WORKS**

If you agree to participate and you meet study criteria, you will be given the dates of the study and the location of where the study will occur. The study will occur over a period of four weeks. There will be an orientation session where an overview of the study will be presented and you will receive study materials and be asked to complete a demographic questionnaire and two stress management instruments. This portion of the study will last

approximately 45 minutes. This will also include a group session to introduce the technique including an opportunity to practice the technique. You will be asked to perform the technique at least once daily and then record your performance in a log which will be collected and tallied each week. You will be asked to return for a group during the first, second and fourth weeks. These sessions will be 15-30 minutes in length allowing time to reinforce the technique, answer questions and complete questionnaires about your experience.

### **RISKS**

Few side effects have been reported when using Emotional Freedom Technique. Most people feel relaxed and calm after using the technique. Occasionally, some have reported initial feelings of increased anxiety or fear when first using the technique. These feelings are usually transient and usually decrease with repeated practice.

### **EXCLUSION CRITERIA**

- Previous or current practice of Emotional Freedom technique
- Currently undergoing professional treatment for anxiety

### **BENEFITS**

This study may or may not improve your condition. You may experience positive feelings of relaxation and calmness from this technique. You may find that this is a technique you would like to continue to use to manage feelings of stress and anxiety. The information gained from your case may benefit others with your condition.



**ALTERNATIVE PROCEDURE/TREATMENT**

There is no alternative treatment being offered in this study. You have the right to choose not to participate.

**ADDITIONAL COST**

The only cost to you in this study will be the time you spend practicing the technique and meeting with the researcher.

**COMPENSATION**

In appreciation for your participation in this study, you will receive a Target gift card for \$20.00 after completion of the study.

**WITHDRAWAL**

Your participation in this study is completely voluntary. You should feel under no pressure to be in the study. If you decide not to be in the study, it will not in any way harm your relations with your doctors or with Carolinas HealthCare System. You are free to stop being in the study if you change your mind after entering it. This would not harm your relations with your doctors or Carolinas HealthCare System. We will tell you about new medical findings that may affect your willingness to continue in the study.

**CONFIDENTIALITY:**

The records of this study will be kept private. In any sort of report we might publish, we will not include any information that will make it possible to identify a participant. All data will be de-identified and be absent of personal identifiers. All information and data will be kept stored separately from identifying data. Because this research involves group

discussion, your anonymity cannot be guaranteed. Each member of the group will agree to keep any information about individuals that arises from the context of the group, confidential. When results are published, you will not be identified by name. All data will be stored in a password protected computer in the researcher's home office and there will be no access to patient health records in this study. Data will be stored for 5 years at which time it will be destroyed. All information obtained in this study is strictly confidential unless disclosure is required by law. To that extent, confidentiality is not absolute.

### **QUESTIONS**

The researchers doing the study at Carolinas HealthCare System are Susan Patterson RN, MS and Elizabeth Repede PhD. You may ask them any questions you have now. If you have questions later, you may contact Susan Patterson and Dr. Repede at:

Carolinas College of Health Sciences

1200 Blythe Boulevard

Charlotte, NC 28203

Telephone 704 355 3464

The Institutional Review Board is a group of people who review the research to protect your rights. If you have questions about the conduct of this study or about your rights as a research subject, you may call the chairperson of the Institutional Review Board of Carolinas HealthCare System for information regarding patients' rights in a research study. You can obtain the name and number of this person by calling (704) 355-3158.

**CONSENT**

I have read the above information. I have asked any questions I had, and those questions have been answered. I agree to be in this study and authorize the use of my personal health information. Susan Patterson will give me a copy of this form.

\_\_\_\_\_

\_\_\_\_\_

**Patient [representative] Print Name                      Date                      Time**

\_\_\_\_\_

\_\_\_\_\_

**Patient [representative] Signature                      Date                      Time**

\_\_\_\_\_

\_\_\_\_\_

**Signature of Person Obtaining Consent                      Date                      Time**

\_\_\_\_\_

\_\_\_\_\_

**Investigator Signature                      Date                      Time**

**Identity of representative:**

Next of Kin

Parent/Guardian

Healthcare Power of Attorney

Appendix I  
**EFT Demographic Questionnaire**

*Please answer the following basic demographic and project related questions.*

ID# \_\_\_\_\_

Age \_\_\_\_\_ Gender M \_\_\_ F \_\_\_ Years of previous college \_\_\_ Marital status M \_\_\_ S \_\_\_

Currently employed Yes \_\_\_ No \_\_\_

If currently employed: ≤ 10 hrs./wk \_\_\_ 11-15 hrs./wk \_\_\_ 16-20 hrs./wk \_\_\_ 21-30hrs./wk \_\_\_  
 31-40 hrs./wk \_\_\_ >40 hrs./wk \_\_\_

Previous 4 yr. college degree Yes \_\_\_ No \_\_\_ Previous graduate degree Yes \_\_\_ No \_\_\_

Course currently enrolled in \_\_\_\_\_ Number of previous nursing courses \_\_\_\_\_ Current GPA \_\_\_\_\_

Has anxiety and stress been an issue for you? Please explain.

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What kinds of things have you tried control stress and anxiety?

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Have you ever used emotional freedom technique before to control stress and anxiety or for other reasons? Yes \_\_\_ No \_\_\_ If yes, please describe your familiarity and the frequency of use of EFT more specifically.

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## Appendix J

**Perceived Stress Scale-10 Item**

The questions in this scale ask you about your feelings and thoughts during the last month. In each case, please indicate with a check how often you felt or thought a certain way.

1. In the last month, how often have you been upset because of something that happened unexpectedly?

\_\_\_0=never    \_\_\_1=almost never    \_\_\_2=sometimes    \_\_\_3=fairly often    \_\_\_4=very often

2. In the last month, how often have you felt that you were unable to control the important things in your life?

\_\_\_0=never    \_\_\_1=almost never    \_\_\_2=sometimes    \_\_\_3=fairly often    \_\_\_4=very often

3. In the last month, how often have you felt nervous and "stressed"?

\_\_\_0=never    \_\_\_1=almost never    \_\_\_2=sometimes    \_\_\_3=fairly often    \_\_\_4=very often

4. In the last month, how often have you felt confident about your ability to handle your personal problems?

\_\_\_0=never    \_\_\_1=almost never    \_\_\_2=sometimes    \_\_\_3=fairly often    \_\_\_4=very often

5. In the last month, how often have you felt that things were going your way?

\_\_\_0=never    \_\_\_1=almost never    \_\_\_2=sometimes    \_\_\_3=fairly often    \_\_\_4=very often

6. In the last month, how often have you found that you could not cope with all the things that you had to do?

\_\_\_0=never    \_\_\_1=almost never    \_\_\_2=sometimes    \_\_\_3=fairly often    \_\_\_4=very often

7. In the last month, how often have you been able to control irritations in your life?

\_\_\_0=never    \_\_\_1=almost never    \_\_\_2=sometimes    \_\_\_3=fairly often    \_\_\_4=very often

8. In the last month, how often have you felt that you were on top of things?

\_\_\_0=never    \_\_\_1=almost never    \_\_\_2=sometimes    \_\_\_3=fairly often    \_\_\_4=very often

9. In the last month, how often have you been angered because of things that were outside of your control?

\_\_\_0=never    \_\_\_1=almost never    \_\_\_2=sometimes    \_\_\_3=fairly often    \_\_\_4=very often

10. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?

\_\_\_0=never    \_\_\_1=almost never    \_\_\_2=sometimes    \_\_\_3=fairly often    \_\_\_4=very often

### Appendix K

For use by Susan Patterson only. Received from Mind Garden, Inc. on February 5, 2012

#### Appendix A

#### The State-Trait Anxiety Inventory

#### SELF-EVALUATION QUESTIONNAIRE STAI Form Y-1

Please provide the following information:

Name \_\_\_\_\_ Date \_\_\_\_\_ S \_\_\_\_\_  
 Age \_\_\_\_\_ Gender (Circle) M F T \_\_\_\_\_

#### DIRECTIONS:

A number of statements which people have used to describe themselves are given below. Read each statement and then blacken the appropriate circle to the right of the statement to indicate how you feel *right now*, that is, *at this moment*. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe your present feelings best.

VERY MUCH SO  
 MODERATELY SO  
 SOMEWHAT  
 NOT AT ALL

- |   |   |   |   |   |
|---|---|---|---|---|
| 1. I feel calm.....                                       | 1 | 2 | 3 | 4 |
| 2. I feel secure.....                                     | 1 | 2 | 3 | 4 |
| 3. I am tense.....  | 1 | 2 | 3 | 4 |
| 4. I feel strained.....                                   | 1 | 2 | 3 | 4 |
| 5. I feel at ease.....                                    | 1 | 2 | 3 | 4 |
| 6. I feel upset.....                                      | 1 | 2 | 3 | 4 |
| 7. I am presently worrying over possible misfortunes..... | 1 | 2 | 3 | 4 |
| 8. I feel satisfied.....                                  | 1 | 2 | 3 | 4 |
| 9. I feel frightened.....                                 | 1 | 2 | 3 | 4 |
| 10. I feel comfortable.....                               | 1 | 2 | 3 | 4 |
| 11. I feel self-confident.....                            | 1 | 2 | 3 | 4 |
| 12. I feel nervous.....                                   | 1 | 2 | 3 | 4 |
| 13. I am jittery.....                                     | 1 | 2 | 3 | 4 |
| 14. I feel indecisive.....                                | 1 | 2 | 3 | 4 |
| 15. I am relaxed.....                                     | 1 | 2 | 3 | 4 |
| 16. I feel content.....                                   | 1 | 2 | 3 | 4 |
| 17. I am worried.....                                     | 1 | 2 | 3 | 4 |
| 18. I feel confused.....                                  | 1 | 2 | 3 | 4 |
| 19. I feel steady.....                                    | 1 | 2 | 3 | 4 |
| 20. I feel pleasant.....                                  | 1 | 2 | 3 | 4 |

## Appendix L

For use by Susan Patterson only. Received from Mind Garden, Inc. on February 5, 2012

### SELF-EVALUATION QUESTIONNAIRE

STAI Form Y-2

Name \_\_\_\_\_ Date \_\_\_\_\_

#### DIRECTIONS

A number of statements which people have used to describe themselves are given below. Read each statement and then blacken in the appropriate circle to the right of the statement to indicate you *generally* feel.

ALMOST NEVER  
SOMETIMES  
OFTEN  
ALMOST ALWAYS

- |  |   |   |   |   |
|--|---|---|---|---|
| 21. I feel pleasant .....  | 1 | 2 | 3 | 4 |
| 22. I feel nervous and restless.....   | 1 | 2 | 3 | 4 |
| 23. I feel satisfied with myself.....  | 1 | 2 | 3 | 4 |
| 24. I wish I could be as happy as others seem to be .....  | 1 | 2 | 3 | 4 |
| 25. I feel like a failure.....   | 1 | 2 | 3 | 4 |
| 26. I feel rested.....   | 1 | 2 | 3 | 4 |
| 27. I am "calm, cool, and collected" .....   | 1 | 2 | 3 | 4 |
| 28. I feel that difficulties are piling up so that I cannot overcome them.....                   | 1 | 2 | 3 | 4 |
| 29. I worry too much over something that really doesn't matter.....                              | 1 | 2 | 3 | 4 |
| 30. I am happy.....  | 1 | 2 | 3 | 4 |
| 31. I have disturbing thoughts.....  | 1 | 2 | 3 | 4 |
| 32. I lack self-confidence.....  | 1 | 2 | 3 | 4 |
| 33. I feel secure.....   | 1 | 2 | 3 | 4 |
| 34. I make decisions easily.....   | 1 | 2 | 3 | 4 |
| 35. I feel inadequate.....   | 1 | 2 | 3 | 4 |
| 36. I am content.....  | 1 | 2 | 3 | 4 |
| 37. Some unimportant thought runs through my mind and bothers me.....                            | 1 | 2 | 3 | 4 |
| 38. I take disappointments so keenly that I can't put them out of my mind.....                   | 1 | 2 | 3 | 4 |
| 39. I am a steady person .....   | 1 | 2 | 3 | 4 |
| 40. I get in a state of tension or turmoil as I think over my recent concerns and interests..... | 1 | 2 | 3 | 4 |





## Appendix N

**EFT Qualitative Questionnaire**

ID \_\_\_\_\_

Please respond to the following questions regarding your experience using emotional freedom technique. Your responses will be kept confidential.

How easy was it for you to use and incorporate the technique into your daily routine?

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Did you experience any change in mood or feelings immediately after using the technique? If so, please describe what you felt.

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Did you experience any change in anxiety or stress immediately after using EFT? If so, how did you experience the change (decreased heart rate, less agitation etc)?

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After the four weeks of using EFT did you experience any overall change in mood or feeling? If so, please describe the overall change or feeling.

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---

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After four weeks of using EFT did you experience any overall change in feelings of anxiety or stress? If so, how did you experience the change (decreased heart rate, less agitation etc.).

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Are there any other feelings or experiences you would like to comment on regarding your practice of EFT?

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## Appendix O

### Debriefing Statement

Thank you for your participation in this research on the Effect of Emotional Freedom Technique (EFT) on stress and anxiety in nursing students. The goal of the research was to better understand if EFT was helpful in reducing feelings of anxiety and stress in nursing students, regardless of the cause. The hypothesis was, "Nursing students participating in EFT will have reduced anxiety relative to baseline as measured by the State Trait Anxiety Inventory (STAI), the Perceived Stress Scale (PSS) and a qualitative instrument."

During this research you were asked to self-administer two pretest instruments (STAI and PSS) and then you received group instruction on the performance of EFT. EFT was explained as a technique which combines the tapping of acupuncture meridian points with a focus on a negative emotion (stress/anxiety) to provide desensitization to the negative emotion. In addition, a statement of self-acceptance was repeated. An opportunity to practice the technique was provided and you were encouraged to practice the technique daily and record the frequency in a log for four weeks. An additional group session was performed once a week during the first and second week to allow for questions and reinforce the technique. The PSS and STAI instruments were re-administered at the end of the second week; at the end of the fourth week you returned again to complete the PSS, STAI, and a qualitative survey.

The data collected from this research is currently being processed. If you are experiencing any anxiety, distress or have questions now or later please contact me at 704 355 3464 or [susan.patterson@carolinas.org](mailto:susan.patterson@carolinas.org). You may also contact the faculty member who supervised this research, Elizabeth Repede PhD. at [imago@comporium.net](mailto:imago@comporium.net)



## Appendix Q

**Emotional Freedom Technique (EFT) Project Evaluation****Student**

*Please answer the following questions regarding your recent use of Emotional Freedom Technique as an intervention available through the college Student Success Center.*

1. The recording of emotional freedom technique was easy to access.

(1) Strongly Disagree   (2) Disagree   (3) Agree   (4) Strongly Agree   (5) Not Applicable

2. Additional assistance was available to me if I needed further guidance in the technique.

(1) Strongly Disagree   (2) Disagree   (3) Agree   (4) Strongly Agree   (5) Not Applicable

3. The recording and accompanying information on performing emotional freedom technique were useful tools for performing the technique.

(1) Strongly Disagree   (2) Disagree   (3) Agree   (4) Strongly Agree   (5) Not Applicable

4. The Perceived Stress Scale was useful for measuring my anxiety/stress.

(1) Strongly Disagree   (2) Disagree   (3) Agree   (4) Strongly Agree   (5) Not Applicable

5. I found emotional freedom technique helpful in reducing stress and anxiety.

(1) Strongly Disagree   (2) Disagree   (3) Agree   (4) Strongly Agree   (5) Not Applicable

6. I practiced emotional freedom technique with the following frequency:

(1) Less than 1X/week   (2) 1X/week   (3) 2-3 X/week   (4) 4-6X/week   (5) daily   (6) more than daily

7. I would recommend Emotional Freedom Technique as an effective stress/anxiety intervention for other students.

(1) Strongly Disagree   (2) Disagree   (3) Agree   (4) Strongly Agree   (5) Not Applicable

## Appendix R

**Emotional Freedom Technique (EFT) Project Evaluation****Student Success Center Coordinator**

*Please answer the following questions regarding the recent implementation of Emotional Freedom Technique as an intervention available to students through the college Student Success Center.*

1. The recording of emotional freedom technique was easy to administer/access.

(1) Strongly Disagree    (2) Disagree    (3) Agree    (4) Strongly Agree    (5) Not Applicable

2. The implementation of the emotional freedom technique project was smooth and timely.

(1) Strongly Disagree    (2) Disagree    (3) Agree    (4) Strongly Agree    (5) Not Applicable

3. The recording and accompanying information on performing emotional freedom technique was adequate.

(1) Strongly Disagree    (2) Disagree    (3) Agree    (4) Strongly Agree    (5) Not Applicable

4. The Perceived Stress Scale was a useful instrument for measuring changes in students self-report of anxiety/stress.

(1) Strongly Disagree    (2) Disagree    (3) Agree    (4) Strongly Agree    (5) Not Applicable

4. Students found emotional freedom technique helpful in reducing stress and anxiety.

(1) Strongly Disagree    (2) Disagree    (3) Agree    (4) Strongly Agree    (5) Not Applicable

5. I would recommend the continued use of Emotional Freedom Technique as a stress/anxiety intervention for students through the student success center.

(1) Strongly Disagree    (2) Disagree    (3) Agree    (4) Strongly Agree    (5) Not Applicable

## Appendix S

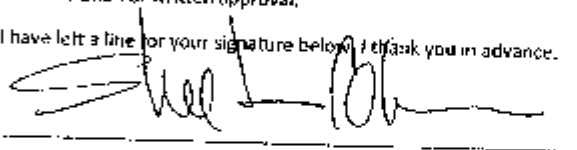
**Susan L. Patterson**  
624 Barington Place  
Matthews, NC 28105  
704.321.5833

Ellen Conser  
Department of Psychology  
Carnegie Mellon University  
5000 Forbes Avenue  
Pittsburgh, PA 15213

Dear Ms. Conser:

I will be using the Perceived Stress Scale (PSS), developed by Sheldon Cohen, for a doctoral project/pilot study involving approximately 30 nursing students. I understand that you do not require permission for use of the scale when used for academic or educational purpose, however my program requires demonstration of written approval.

I have left a line for your signature below. Thank you in advance.



(approval to use Perceived Stress Scale)

Sincerely,



Susan L. Patterson